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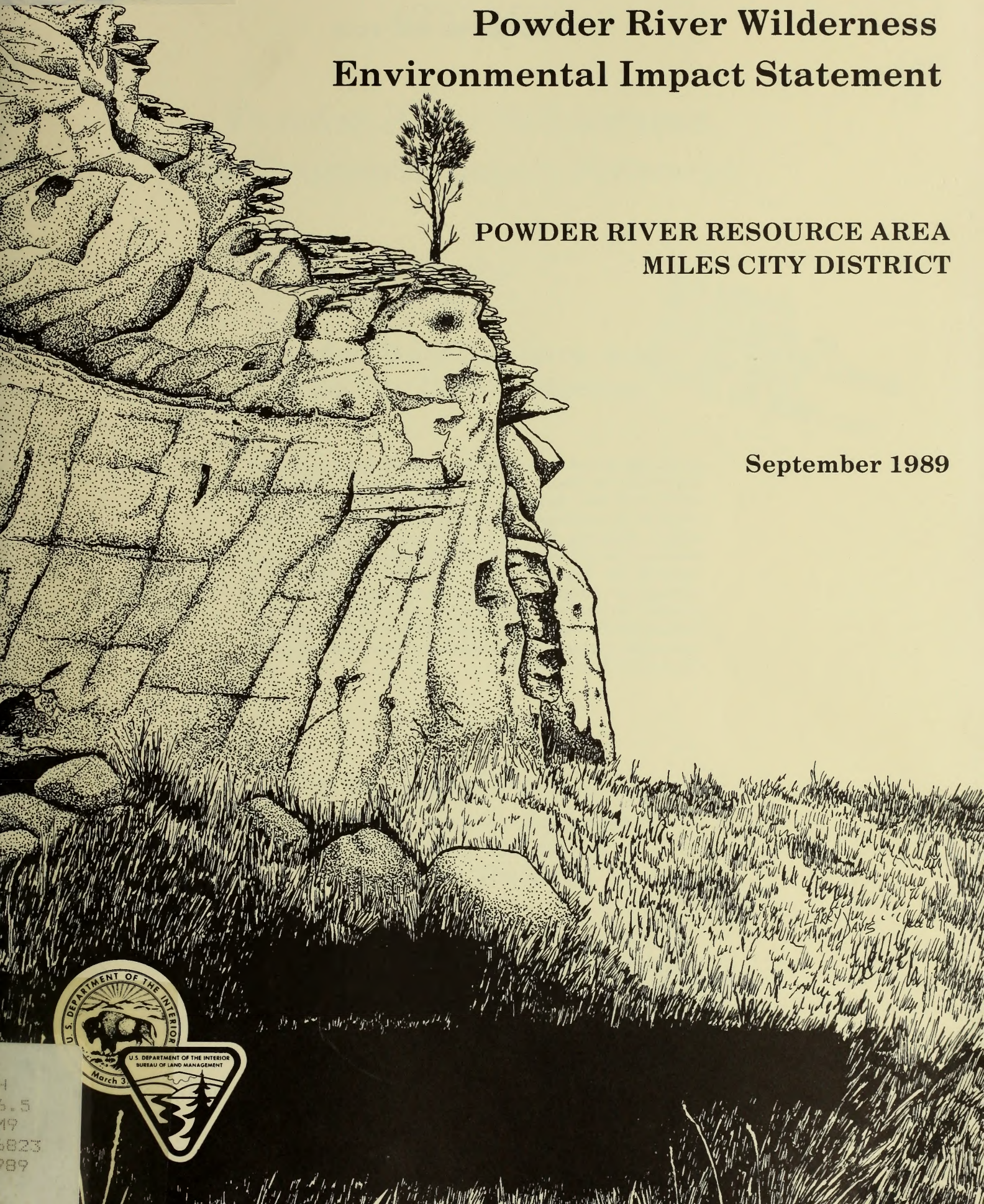

POWDER RIVER RESOURCE AREA
MILES CITY DISTRICT

September 1989

U.S. DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT
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Powder River Wilderness
Environmental Impact Statement

for the

Powder River Resource Area
Miles City District, Montana

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September 1989

Prepared by

U.S. Department of the Interior
Bureau of Land Management
Miles City District
Miles City, Montana

Marvin LeNoue
State Director

Powder River Wilderness
Environmental Impact Statement
for the
Powder River Resource Area
Miles City District, Montana

LEAD AGENCY: Powder River Resource Area
Miles City District, Miles City, Montana
Bureau of Land Management
Department of the Interior

TYPE OF ACTION: Administrative ( ) Legislative (X)

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ABSTRACT:

This Wilderness Suitability Study/Final Environmental Impact Statement (FEIS) describes and analyzes the environmental, social, and economic effects of designating or not designating two wilderness study areas (WSAs) in the Powder River Resource Area as wilderness. The study areas are Buffalo Creek (5,650 acres) and Zook Creek (8,438 acres). Buffalo Creek and Zook Creek WSAs are being studied under the authority of Section 603 of the Federal Land Policy and Management Act. The alternatives considered in the study are All Wilderness and No Wilderness. The proposed action is to recommend both WSAs as unsuitable for wilderness designation.

The draft Resource Management Plan (RMP)/Environmental Impact Statement (EIS) was filed with EPA on February 24, 1984, and received a 90-day public review from March 9 to June 7, 1984, which included public hearings. Comments were received from various individuals, organizations, and governmental agencies during the review period and have been incorporated into the analysis contained in this FEIS. The final RMP/EIS was filed with EPA on December 14, 1984.

For further information regarding this Wilderness Suitability Study/FEIS, contact:

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SUMMARY

PROPOSED ACTION

For the Powder River Resource Area in southeastern Montana, the proposed action is to recommend that all 14,088 acres of two Section 603 of FLPMA wilderness study areas (WSAs) are nonsuitable for wilderness designation. The following table portrays the recommendation for each WSA.

TABLE OF RECOMMENDATIONS

Study Area	Acreage Recommended Suitable	Acreage Recommended Nonsuitable
Zook Creek WSA (MT-027-701)	0	8,438
Buffalo Creek WSA (MT-027-702)	0	5,650
Totals		14,088

The purpose of this document is to analyze the potential impacts from implementation of the proposed action and alternatives. This Environmental Impact Statement examines the environmental, social, and economic impacts that result from the designation or nondesignation of each of the two WSAs. Based on this analysis and other documents, the Secretary of the Interior will make a recommendation to the President. Congress will make the final decision on wilderness designation.

ALTERNATIVES ADDRESSED

Two alternatives are examined for both WSAs: All Wilderness and No Wilderness. Due to the small size of these WSAs, no additional alternatives were selected for detailed analysis. The All Wilderness Alternative examines the impacts of designating each WSA as wilderness. The No Wilderness Alternative analyzes the impacts of not designating either of the WSAs as wilderness. If the No Wilderness recommendation is selected by Congress, then management of the areas will be as specified in the proposed alternative of the existing Resource Management Plan (RMP/EIS) for the Powder River Resource Area.

CONCLUSIONS

The results of the impact analysis for each alternative are discussed below by WSA.

Zook Creek WSA

Proposed Action — (No Wilderness/No Action Alternative)

The entire acreage would be recommended as nonsuitable for wilderness designation. The area would be managed under the existing RMP/EIS for actions other than wilderness. Motorized equipment would be used to maintain existing projects and recreational ORV use would continue. The primitive recreation and supplemental values of the WSA would be retained. However, the sights and sounds of offsite mining would reduce naturalness on 20% of the area intermittently for a five year period.

All Wilderness

The entire 8,438 acres would be recommended as suitable for wilderness designation. Management of the area would be consistent with the Wilderness Management Policy. Range projects would continue to be maintained. However, no new projects would be constructed. ORV use would be prohibited.

The naturalness on 1% of the WSA would increase due to the revegetation of 3 miles of vehicle ways. Solitude would increase on 5% of the WSA due to reductions in the use of motorized equipment. However, the sights and sounds of offsite mining would reduce naturalness and solitude on 20% of the area intermittently for a 5 year period. Project maintenance would require additional labor time.

Buffalo Creek WSA

Proposed Action — (No Wilderness/No Action Alternative)

The entire acreage would be recommended as nonsuitable for wilderness designation. The area would be managed under existing RMP/EIS for actions other than wilderness. Management of the area would be in compliance with the existing RMP/EIS. The area would continue to be grazed and existing projects would be maintained. The entire area would be open to ORV use and to mineral leasing and development. Two oil and gas wells would be drilled. Five hundred eighty seven acres would be mechanically treated by chiseling and one hundred two acres of poor and fair condition range would improve to good.

There will be a series of actions, which will each cause short-term impacts on naturalness. A seismograph operation will disturb seven acres for a year. Two gas wells will disturb five acres each for three years. A chiseling operation will disturb five hundred eighty seven acres for up to ten years. These impacts would be visible from as much as 20% of the WSA. Solitude would be reduced on as much as 40% of the WSA for a total period of 6 months by these activities. There would be a 22% increase in total vegetative production, AUM allocations and cattle numbers.

All Wilderness

The entire 5,650 acres would be recommended as suitable for wilderness designation. Management of the area would be consistent with the Wilderness Management Policy. Most mineral activities would be prohibited or restricted. Range projects would continue to be maintained. However, no new range improvement projects would be implemented. Cutting of post and poles and ORV use would be prohibited. Six hundred eighty nine acres of poor and fair condition range would improve to good.

The naturalness on 10% of the WSA would improve due to the revegetation of the 5 miles of vehicle ways. Solitude would be enhanced on 20% of the WSA due to the elimination of 150 visitor days of recreational ORV use and the reduction of motorized equipment use to maintain range developments. The opportunity to drill two oil and gas wells would be foregone. Range project maintenance would require more hand labor. The opportunity to mechanically treat (chisel) five hundred eighty seven acres would be foregone. There would be an increase in total vegetative production, AUM allocation and cattle numbers by 13%. Recreational ORV use would decline from 150 annual visitor days to zero.

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CHAPTER 1
INTRODUCTION

PURPOSE AND NEED

The purpose of this document is to analyze the potential impacts from implementation of the proposed action and other alternatives.

The Powder River Wilderness Suitability Study/Final Environmental Impact Statement (FEIS) has been prepared in response to Section 603 of the Federal Land Policy and Management Act of 1976 (FLPMA). This law directed the Bureau of Land Management (BLM) to inventory, study and then report to Congress through the Secretary of the Interior and the President, the suitability of certain public lands for inclusion in the National Wilderness Preservation System (NWPS). This FEIS follows the Council of Environmental Quality guidance in complying with the National Environmental Policy Act of 1969 (NEPA).

This document completes the study requirement for 2 of the 42 wilderness study areas (WSAs) in Montana. The FLPMA requires the Secretary of the Interior to report these recommendations to the President by October 21, 1991. The President has two years from receipt to send the recommendations to Congress.

The acreage figures for the WSAs under study are depicted in Table 1-1.

TABLE 1-1
Wilderness Study Areas Analyzed

Wilderness Study Area	Acreage
Zook Creek (MT-027-701)	8,438
Buffalo Creek (MT-027-702)	5,650
TOTAL	14,088

The study was conducted in accordance with BLM planning regulations (43 CFR 1600) which provides for the issuance of national policy and procedural guidance. The BLM's Wilderness Study Policy establishes procedures to ensure that suitability recommendations are: (1) based on full consideration of all multiple resource values of public lands, (2) consistent with established national policy and (3) that all interested and affected members of the public and state and local governments are made aware of the study and given adequate opportunity to comment and be involved in the study process.

Since the public hearings associated with the Powder River Resource Management Plan — Draft Environmental Impact Statement (RMP-DEIS), 110 acres in five parcels were acquired contiguous to the Buffalo Creek WSA. Since these acquired lands were not analyzed in the RMP-DEIS nor subjected to the hearing process, they will not be considered in this document.

ENVIRONMENTAL SETTING

The Zook Creek and Buffalo Creek WSAs are administered by the Powder River Resource Area, Miles City District in southeastern Montana. (See Map 1.) The Zook Creek WSA is in Rosebud County and the Buffalo Creek WSA is in Powder River County.

WILDERNESS REVIEW PROCESS

To carry out the wilderness mandate of Section 603 of FLPMA, BLM developed a wilderness review process consisting of three phases: inventory, study, and reporting.

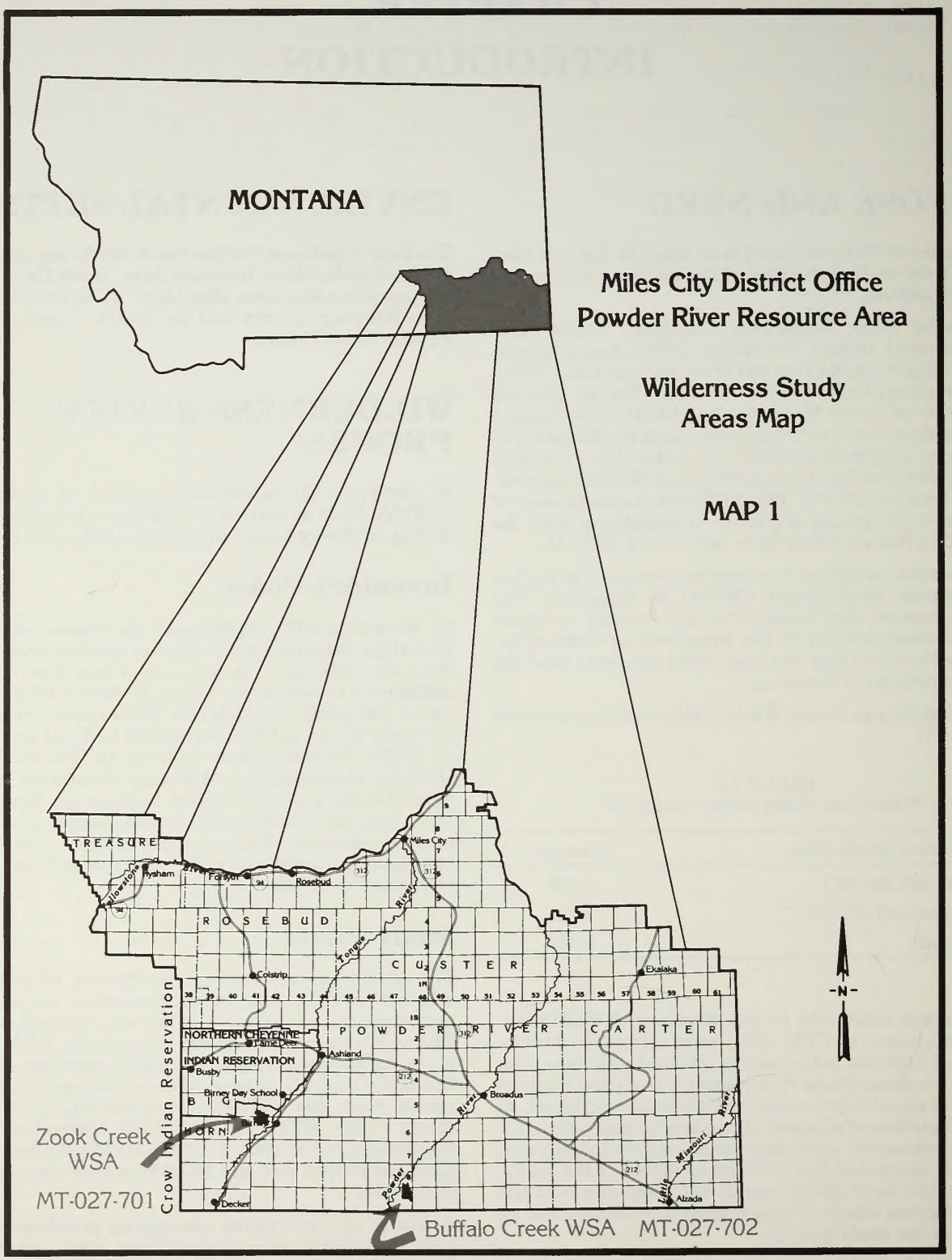
Inventory Phase

In November 1978, BLM began its wilderness review by preparing descriptions of areas of 5,000 or more roadless acres of public land, those areas of less than 5,000 acres contiguous to wilderness areas, or other wilderness study areas, and public land islands. These inventory units were reviewed by the public, inventoried by BLM and reviewed by BLM's Montana State Director in 1979-80. The State Director published the Montana Wilderness Inventory Final Decision in the Federal Register on November 14, 1980. That decision identified those inventory units which met the minimum characteristics of size, naturalness and outstanding opportunity for solitude and/or primitive recreation as WSAs.

Study Phase

The study phase involves the process of determining whether a WSA will be recommended as suitable or recommended as nonsuitable for wilderness designation. These determinations, made through the BLM land use planning system, consider all values, resources, and uses of the public lands. Guidance for the wilderness study process comes from the following sources: BLM's Wilderness Study Policy; NEPA (40 CFR 1500, November 29, 1978), Wilderness Act of 1964; FLPMA; BLM's Wilderness Management Policy; and the BLM Planning Regulations (43 CFR 1600).

Analysis of alternatives concerning preliminary wilderness suitability recommendations were made in the Powder River Resource Area Resource Management Plan (RMP)/EIS completed March 1985. Two study areas containing 14,088 acres in the Powder River Resource Area were considered for wilderness. The entire 14,088 acres were recommended preliminarily nonsuitable for wilderness designation. Public hearings were held in Ekalaka, Montana, on April 11, 1984, in Miles City, Montana, on


MONTANA
Miles City District Office
Powder River Resource Area
Wilderness Study
Areas Map
MAP 1
TREASURE
ROSEBUD
POWDER RIVER
CUSTER
CARTER
Miles City
Forsyth
Rosebud
Colstrip
Ekalaka
Ashland
Broadus
Busby
Birney Day School
Decker
Alzada
NORTHERN CHEYENNE
INDIAN RESERVATION
Crow Indian Reservation
Zook Creek
WSA
MT-027-701
Buffalo Creek WSA MT-027-702
N

April 12, 1984, in Sheridan, Wyoming, on April 17, 1984, and in Colstrip, Montana, on April 18, 1984.

Reporting Phase

Upon the completion of this study, recommendations as to whether the areas are suitable or nonsuitable for designation as wilderness will be made through the Secretary of the Interior to the President. A mineral survey will be conducted by the U.S. Geological Survey (USGS) and Bureau of Mines for those areas recommended as suitable. Since the two WSAs in this report have a nonsuitable recommendation, no mineral surveys and subsequent mineral reports will be prepared. Reports on all wilderness study areas must reach the President no later than October 21, 1991.

Congress has the statutory authority for designating any federal land as wilderness. Congress will take the recommendations submitted by the President, along with any other information it may have obtained through its own sources and, after debate and counsel, will enact legislation that would formally designate WSAs as wilderness or release them for uses other than wilderness.

SCOPING

Issue identification for this Wilderness EIS was combined with scoping for the RMP/EIS. In May 1980, meetings were held in Sheridan, Wyoming, and Ekalaka, Birney, Broadus, Hysham, Forsyth, Miles City, and Colstrip, Montana. Other concerns were identified by reviewing public comments received during the wilderness inventory. BLM resource specialists also identified issues.

Scoping served to identify the potential issues. Further consideration determined those to be analyzed and those eliminated from detailed study on the basis of insignificance. The significant issues have been incorporated into the range of alternatives in this Wilderness EIS.

Zook Creek Wilderness Study Area

Significant Issues Considered for Detailed Analysis

Impacts on Wilderness Values

Impacts on Maintenance of Existing Range Projects

Impacts on Deer and Turkey Habitat

Impacts on Recreational ORV Use

Issues Not Selected for Detailed Analysis

The following issues were identified in scoping but were not selected for more detailed analysis in this EIS. The reasons for setting each of the issues aside are discussed below.

Impacts on Onsite Coal Mining — There were concerns expressed by the public that wilderness designation would prohibit onsite coal mining. This is not considered to be a significant issue because the potential for onsite coal development is low. Although the U.S. Geologic Survey and BLM have identified 464 million tons of coal in the WSA as high and moderate potential for development, other factors discussed below reduce the potential for development. This coal amounts to 0.7 percent of the total coal available for leasing in the Montana portion of the Powder River coal region.

Of the 8,438 acres in the WSA, 4,438 acres (291 million tons) would be removed from leasing consideration because of Unsuitability Criterion 15 — wildlife habitat designation (Appendix A). An additional 2,400 acres has a very low potential for mining because of the difficulty of reclamation. This acreage is Land Capability Class VII because of topography, depth to bedrock, rock outcrops and steepness of slope. Based on the low potential for mining, the impacts of wilderness designation on future onsite coal mining is not considered a significant issue. No tracts remain which are sufficiently large for mining. Furthermore, no intent to mine has been shown by industry.

Impacts on Oil and Gas Exploration and Developments — The U.S. Geological Survey rated the area as low oil and moderate gas occurence potential. The WSA is in the northern Powder River Basin in the area of the Powder River syncline. Most historic drilling is southeast of the WSA. Since 1953, 25 dry holes and one dry hole with a gas show have been drilled, plugged and abandoned in the 12 surrounding townships (T. 5 S. through T. 7 S., by R. 40 E. through R. 43 E.). Most of the wells were drilled for oil to an approximate depth of 8,000 feet to the Morrison formation. No wells were drilled within the WSA, although 6 of the 26 are within 3 miles of the boundary (BLM 9/88). Based on the occurence potential rating and historical lack of successful activity in the surrounding townships, no oil and gas development activity is projected to occur. Therefore, this is an issue that will not be analyzed further.

Impacts on Development of New Range Projects — The RMP/EIS proposed no new range projects in this WSA even if not designated wilderness. Therefore, new range project development is not considered significant.

Impacts on Grazing Allocation Amounts and Levels — AUM allocation amounts or levels would not be changed due to wilderness designation. Therefore, this is not considered significant.

Impacts on Insect and Fire Control — Concerns were raised by the public that, if the WSA were designated as Wilderness, insect infestations or fires would spread to areas outside the wilderness. Insect infestations and fires starting in wilderness areas would not be allowed to spread uncontrolled in wilderness areas. BLM's wilderness policy requires that insect outbreaks and fires be controlled to protect life, resources or property on areas outside the wilderness area. Consequently, whether or not the WSA is managed as wilderness is not relevant.

Impacts on Post and Pole or Timber Cutting — Forest inventory (1964) results show 2,075 acres of which appear to meet the minimum standard for commercial forest land (CFL). However, it is scattered and would not be managed as commercial forest land due to other resource values. It amounts to a standing gross volume of approximately 3.3 million board feet and constitutes approximately 4 percent of such lands on BLM administered land within the Powder River Resource Area. Other local sources of better commercial timber are found in the Custer National Forest and the Northern Cheyenne Indian Reservation. No contracts for timber sales or permits for post and poles or firewood have ever been issued in the WSA. No harvest is anticipated in the future. Based on the existence of other local sources and the projected lack of interest in harvesting, this is not a significant issue.

Impacts on Air Quality — The entire area is designated as Class II by the Environmental Protection Agency. Wilderness designation or nondesignation would not cause the air quality classifications to change and is not considered a significant issue.

Impacts on Soil Erosion — Concerns were raised that continued use by ORVs or projected development would increase erosion. Currently ORV use occurs on three miles of vehicle way constituting three acres. No development is projected. Under the proposed action, the erosion rate is expected to remain above the normal geologic rate of nine tons/acre/year as a result of projected ORV activities. Compared to the geologic rate under the wilderness alternative, the additional erosion from projected surface disturbance on 0.03 percent of the WSA is not significant. Consequently, soil erosion is not an issue for more detailed analysis.

Impacts on Threatened and Endangered Species — There were no federally listed threatened or endangered species identified in this WSA. Therefore, this is not considered a significant issue.

Impacts on Cultural Resources — No prehistoric or historic sites are recorded in the WSA because inventories have not been conducted. However, sampling surveys in the region indicate that the WSA is likely to contain several significant, but not National Register eligible, prehistoric properties and few, if any, historic properties. With or without wilderness designation there would be no surface disturbance, except for incidental ORV use of 25 visitor days annually. Therefore, cultural properties would not be disturbed. Based on the lack of proposed surface disturbance, this issue is not considered significant.

Buffalo Creek Wilderness Study Area

Significant Issues Selected for Detailed Analysis

Impacts on Wilderness Values

Impacts on Oil and Gas Exploration and Development

Impacts on Maintenance of Existing Range Projects

Impacts on New Range Project Construction

Impacts on Vegetation Management

Impacts on Soil Erosion

Impacts on Deer Habitat

Impacts on Recreational ORV Use

Issues Considered, but Not Selected for Detailed Analysis

The following issues were identified in scoping but were not selected for more detailed analysis in this EIS. The reasons for setting each of the issues aside are discussed below.

Impacts on Onsite Coal Mining — There were public concerns that wilderness designation would prohibit onsite coal mining. This is not considered to be a significant issue because the potential for onsite coal development is low. Although the U.S. Geological Survey has ranked the quality of the 70 million tons of coal (55 million tons in WSA and 15 million tons outside of the WSA in aliquot parts) as high and moderate development potential, other factors discussed below reduce the potential for development. This coal amounts to 0.1 percent of the total coal available for leasing in the Montana portion of the Powder River coal region. Reclamation potential is questionable on 229 acres in land capability Classes VII and VIII due to topography, depth to bedrock, rock outcrops and steepness of slope. The area is extremely remote from any railroads. Based on the low potential for mining, impacts of wilderness designation on onsite coal development is not a significant issue and will not be further analyzed. See Appendix A for an application of coal unsuitability criteria.

Impacts on Air Quality — The entire area is designated Class II by the Environmental Protection Agency. Wilderness designation or nondesignation would not cause the air quality classification to change and is not considered a significant issue.

Impacts on Soil Erosion — Concerns were raised that continued use by ORVs or projected development would increase erosion. Currently, ORV use occurs on five miles of vehicle way constituting five acres. No development is projected. Under the proposed action, the erosion rate is expected to remain above the normal geologic rate of nine tons/acre/year as a result of projected ORV activities. Compared to the geologic rate under the wilderness alternative, the additional erosion from projected surface disturbance is on 0.09 percent of the WSA. Consequently, soil erosion is not an issue for more detailed analysis.

Impacts on Threatened and Endangered Species — There are no federally listed threatened or endangered species identified in this WSA.

Therefore, this is not considered a significant issue.

Impacts on Cultural Resources — Approximately 960 acres (17 percent) of the Buffalo Creek WSA have been surveyed for cultural resources. Three sites were located during an archaeological survey, and two others are reported. These sites include four lithic scatters and a historic cabin. Inventory in the area and the diverse environmental zones suggest the area has high potential for cultural resources. Other types of sites likely to be present include porcellanite quarries and campsites. BLM will preserve cultural resources through site inventories prior to any surface disturbance, including 587 acres of surface treatment and 10 acres associated with the projected drilling of 2 gas wells. Therefore, cultural properties would be protected with or without wilderness designation. Based on protection associated with the levels of proposed surface disturbance and 150 days of ORV use annually, this is not a significant issue.

Impacts on Post and Pole or Timber Cutting — Forest inventory (1964) results show 253 acres which appear to meet the minimum standard for commercial forest land (CFL). However, it is scattered and would not be managed as commercial forest land due to other resource values. It amounts to a standing gross volume of approximately 0.5 million board feet and constitutes less than 1% of such lands on BLM administered land within the Powder River Resource Area. Other local sources of better commercial timber are found in the Custer National Forest and the Northern Cheyenne Indian Reservation. No contracts for timber sales or permits for posts and poles or firewood have ever been issued in the WSA. No harvest is anticipated in the future. Based on the existence of other local sources and the projected lack of interest in harvesting, this is not a significant issue.

CHAPTER 2
ALTERNATIVES

ALTERNATIVE FORMULATION

Overview

This Wilderness EIS was extracted from the Draft RMP/EIS for the Powder River Resource Area. The RMP/EIS addresses the management of the surface and mineral estate of lands administered by the BLM for 10 to 15 years. The RMP/EIS specified the alternatives considered and provided analyses for public review on many actions including wilderness designation. The wilderness alternatives, analyses and consideration of public comment were used to form this Final Wilderness EIS.

The Draft RMP/EIS included five alternatives. The proposed action included nonsuitable recommendations for both Zook Creek and Buffalo Creek Wilderness Study Areas (WSAs). Alternative A was the no action alternative, which is the continuation of current management and did not include suitability recommendations for the WSAs. Alternative B, the multiple use alternative, recommended Zook Creek WSA as suitable as wilderness but not Buffalo Creek WSA. Alternative C, the resource production alternative recommended the WSAs as nonsuitable for wilderness designation. Alternative D, the resource protection alternative, recommended both WSAs as suitable for wilderness.

Wilderness Alternatives Formulation

The requirements for the range of alternatives contained in the BLM Wilderness Study Policy were met in the RMP/EIS as follows: All wilderness was met by Alternative D; no wilderness was met by Alternative C and the preferred alternative; no action was met by Alternative A; and partial wilderness was met by Alternative B.

Other alternatives were considered as possible methods of resolving specific issues, but were eliminated from detailed study due to technical or legal constraints or because they proved unreasonable.

1. Partial WSA Alternative

   A partial wilderness designation involving the reduction in size of either WSA was not analyzed as an alternative. Boundary adjustments would not improve wilderness characteristics, nor would resource conflicts be reduced. As the present boundaries are identified, the area meets the minimal characteristics for wilderness.

2. Expanded WSA Alternative

   The extension of either WSA boundary to include public lands outside the present boundary was not analyzed as an alternative. Inventory results showed that 269 acres of contiguous public land outside Zook Creek WSA lacked wilderness characteristics. There is no other public land contiguous to Zook Creek WSA.

   Approximately 110 acres of public lands (split estate) contiguous to Buffalo Creek WSA were acquired after the DEIS and associated public hearings. These lands are not included in the following analysis.

No additional alternatives were identified during scoping or during the public comment period on the Draft RMP/EIS.

ALTERNATIVES

The actions by alternatives are discussed individually in the text.

Zook Creek Wilderness Study Area

Proposed Action (No Wilderness/No Action Alternative)

Wilderness Management Actions

The entire 8,438 acres of Zook Creek WSA would not be designated wilderness under the proposed action. Management of the area would be in compliance with the RMP/EIS. No actions would be taken specifically to retain the wilderness characteristics of the area. The area would continue to be grazed and existing projects would be maintained. The entire area would be designated as open to ORV use and would be available for mineral leasing and development. Specific actions are described under the appropriate action heading below (see Map 2).

Existing Range Project Maintenance Actions

There are no new range projects proposed for this WSA.

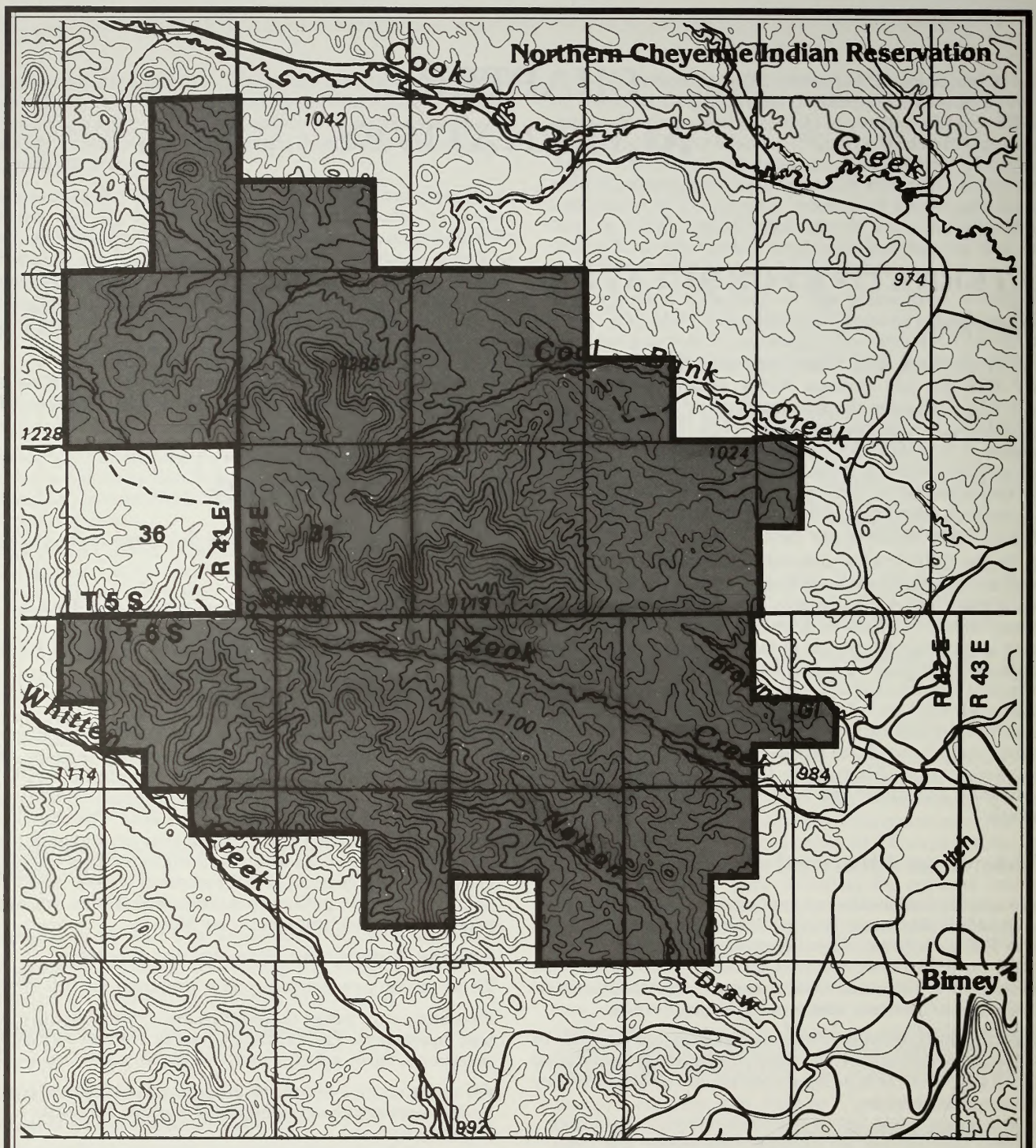
Existing range projects would be maintained using motorized equipment. The existing projects are four fences, four reservoirs, three springs and two water wells.

All maintenance activities are performed by the operator under cooperative agreements. Motorized vehicular access is generally used.

Maintenance activities associated with the seven miles of fence involve vehicular access once annually. Posts are replaced and wires are stretched using hand tools. There is no surface disturbance involved.

Maintenance of four reservoirs includes spillway and embankment reconstruction every 20 years for an average of one per five years. This activity requires heavy mechanized equipment such as bulldozers. Surface disturbance is confined within the high water area and to the spillway and embankment.

Maintenance activities for the two water wells include downhole rehabilitation every 20 years for an average of one per 10 years. This requires the use of a drill rig mounted on a large truck. Surface compaction occurs on the pad


Northern Cheyenne Indian Reservation
Cook
Creek
1042
974
Cool Bank
Creek
1285
1228
1024
36
T5S
R42E
R43E
T6S
Zook
Creek
1100
1114
984
Ditch
Birney
Draw
992
Wilderness Study Area
All Wilderness or No Wilderness
Proposed Action - No Wilderness
ZOOK CREEK WSA
MT-027-701
N
10 0 1 2
SCALE IN MILES
Map 2

areas and one mile of access which total approximately an acre.

Spring maintenance for the three springs would be done on an as needed basis and can be accomplished with hand tools. However, motorized equipment is typically used. There is very little surface disturbance involved.

Wildlife Management Actions — Deer and Turkey Habitat

There are no proposed habitat improvement projects, no species introductions, and no new range project development actions projected.

Recreational ORV Use Actions

The entire area would be administratively designated as open to ORV use. Due to terrain, use would be physically limited to the existing 3 miles of vehicle ways and trails. Levels of use would continue at 25 visitor days per year on three miles of vehicle way.

Offsite Coal Mining Actions

The following projection is speculative, but reasonable. An open coal mine (MONTCO) is projected for lands east of the Tongue River and north of the WSA. Coal would be mined for railroad shipment. There would be no onsite coal conversion facilities. The geographic focus of current permitting is for processing facilities (crushers, railroad loading facilities and mining operations) approximately 12 miles northeast of the WSA. Transportation corridors (railroad lines, power supply lines, and highways) would be even further north of the WSA.

Based on projected, but conceptual, plans for mining would proceed southward from the proposed mine facilities. The southernmost extent should be 2 miles east of the WSA. It is estimated that these activities would occur over a 5 year period starting as early as the year 2000.

Zook Creek Wilderness Study Area

All Wilderness Alternative

Wilderness Management Actions

All of the 8,438 acres of the Zook Creek WSA would be recommended for wilderness designation. Management of the area would be consistent with the Wilderness Management Policy. There are no specific wilderness management actions proposed. Range projects would continue to be maintained. However, no new projects would be constructed. Post and pole harvest and ORV use would be prohibited. There are no minerals actions projected. Specific actions are described under the appropriate action heading below.

Existing Range Project Maintenance Actions

The existing projects are four fences, four reservoirs, three springs and two wells. They would be maintained as described below.

Maintenance activities associated with the seven miles of fence involve nonmotorized access once annually. Posts are replaced and wires are stretched using hand tools.

Maintenance activities for four reservoirs include spillway and embankment reconstruction every 20 years for an average of one per five years. This requires heavy mechanized equipment such as bulldozers. Access for mechanized equipment would be on the three miles of existing roads at specified periods of time.

Maintenance activities for the two water wells include downhole rehabilitation every 20 years for an average of one per 10 years. This requires the use of drill rigs mounted on a 2½ ton truck. Surface compaction occurs on the pad areas and one mile of access, which total an acre.

Maintenance for three springs should be done only on an as needed basis and can be accomplished with hand tools. Access would be nonmotorized. Surface disturbance will be very minimal.

Wildlife Management Actions — Deer and Turkey Habitat

There are no proposed habitat improvement projects, no species introductions, and no new range project development actions projected.

Recreational ORV Use Actions

The entire area would be closed to ORV use. Levels of use would decline from 25 visitor days per year to zero.

Offsite Coal Mining Actions

The following projection is speculative, but reasonable. An open coal mine (MONTCO) is projected for lands east of the Tongue River and north of the WSA. Coal would be mined for railroad shipment. There would be no onsite coal conversion facilities. The geographic focus of current permitting is for processing facilities (crushers, railroad loading facilities and mining operations) approximately 12 miles northeast of the WSA. Transportation corridors (railroad lines, power supply lines, and highways) would be even further north of the WSA.

Plans are conceptual for mining southward from the proposed mine facilities. The southernmost extent should be two miles east of the WSA. It is estimated that these activities would occur over a five year period starting as early as 2000.

Buffalo Creek Wilderness Study Area

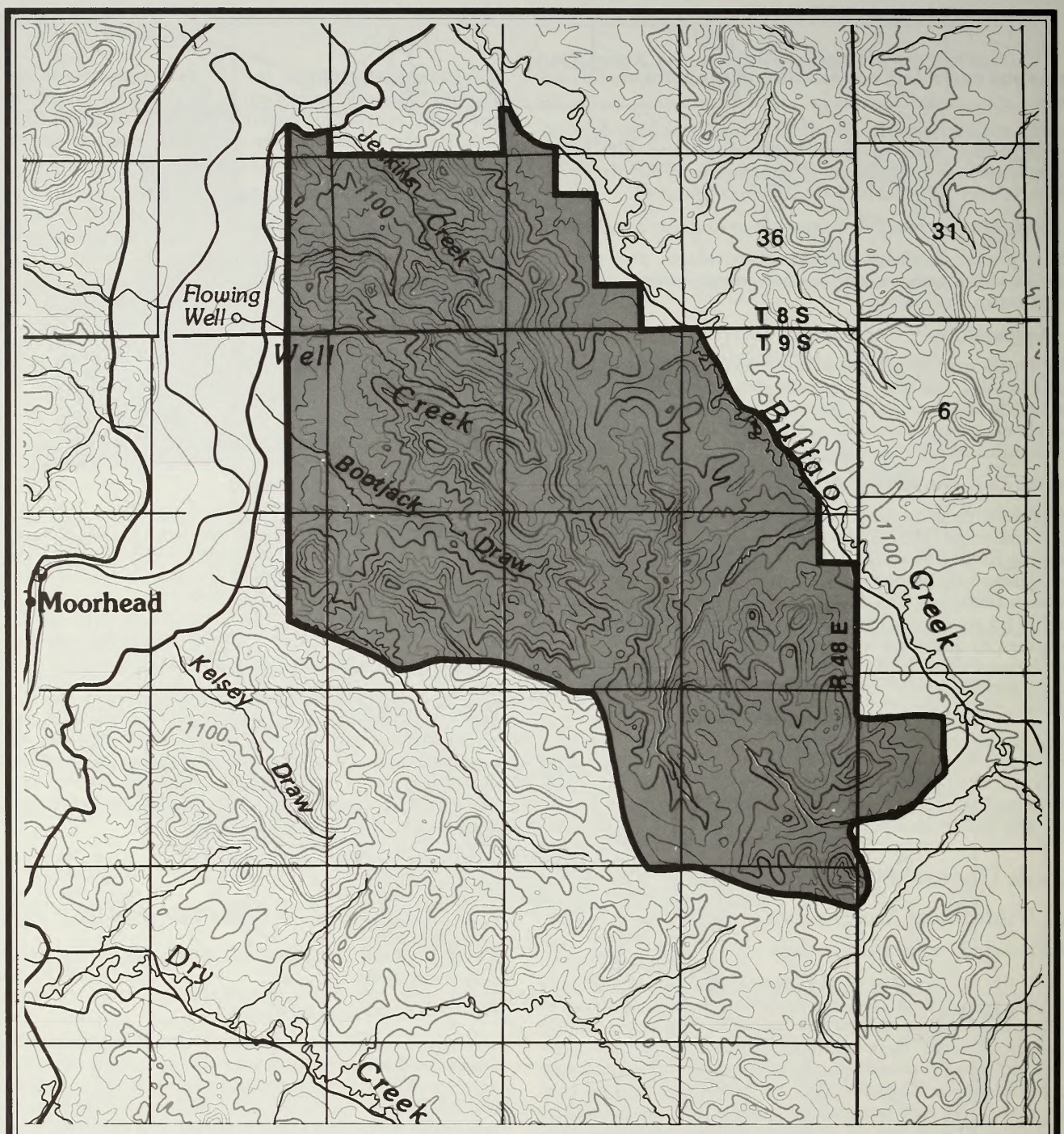
Proposed Action (No Wilderness/No Action Alternative)

Wilderness Management Actions

The entire 5,650 acres of Buffalo Creek WSA would not be designated wilderness under the proposed action. Management of the area would be in compliance with the existing RMP/EIS. No actions would be taken to specifically retain the wilderness characteristics of the area. The area would continue to be grazed and existing projects would be maintained. Proposed range improvement projects would be implemented. The entire area would be open to ORV use and to mineral leasing and development. Specific actions are described under the appropriate action section below (see Map 3).

Oil and Gas Exploration and Development Actions

The entire area would be open to geophysical exploration. The most likely scenario for exploration is that seismic information will be collected along seven miles of route using the vibroseis method. This technology involves the use of large trucks with vibrating pads to create shock waves. Seismometers (geophones) are placed on the surface. No surface disturbance occurs, although there is some soil compaction and vegetative trampling. Rehabilitation will occur within one growing season.



Wilderness Study Area

All Wilderness or No Wilderness

Proposed Action - No Wilderness

BUFFALO CREEK WSA

MT-027-702

N

1 0 1 2

SCALE IN MILES

Map 3

The most likely scenario, based on drilling activity in the surrounding four townships, is the entire area would be leased. Two oil and gas wells would be drilled which would be nonproducing wells. The surface disturbance associated with drilling the two wells would involve approximately three acres for each pad and two acres for each one mile long access road. No pipelines or other production facilities would be built. The surface disturbance would be stabilized and revegetated with native species.

Existing Range Project Maintenance Actions

Existing range projects would be maintained using motorized equipment. The existing projects are nine miles of fences, two springs, two pipelines, and one water well.

All maintenance activities are performed by the operator under cooperative agreements. Motorized vehicular access is generally used.

Maintenance activities associated with the nine miles of fence involve vehicular access once annually. Posts are replaced and wires are stretched using hand tools. There is no surface disturbance involved.

Maintenance activities for the one water well includes downhole rehabilitation every 20 years. This requires the use of drill rigs mounted on a 2½ ton truck. Surface compaction of the pad area and less than one-fourth mile of vehicle way total less than one-quarter of an acre.

Maintenance for the two springs would be done on an as needed basis and can be accomplished with hand tools. However, motorized equipment is typically used.

Maintenance of the two pipelines involves system startup (bleeding air from lines) in the spring and drainage of the system in the fall. This involves hand tools and vehicular access. There is no surface disturbance involved with startup or draining the system. Repair of breaks occurs on the average once every 10 years. It involves vehicular access and hand tools or occasionally a backhoe. Each break involves approximately 20 square feet of surface disturbance, which requires recontouring and revegetating with native species.

New Range Project Construction Actions

New range project construction requires cultural and other feasibility clearances. The following projected action is reasonable, although clearances have not been performed nor has a type of mechanical treatment (chisel plowing, contour furrowing, scalping, pitting, ripping, interseeding or chaining) been determined. Mechanical treatment by chisel plowing would occur on 587 acres to improve poor and fair range condition to good range condition.

Vegetation Management Actions

The total current vegetative production is approximately 1773 tons per year. The projected chisel plowing would increase total vegetative production by 21%. Range management techniques such as salting and rest rotation would improve the remaining 102 acres from poor to fair to good condition range. This would increase total vegetative production by 1%. One-fourth of current production is allocated to domestic livestock. The allocation is 1108 AUMS. One-fourth of the 22% increase in total vegetative production would be allocated to domestic livestock. This allocation is 246 AUMs, which would increase the AUMs allocated to domestic livestock from 1108 to 1354 in the long-term.

Soil Erosion Actions

There are no proposed developments to control soil erosion.

Wildlife Management Actions — Deer Habitat

There are no proposed habitat improvement projects and no species introduction actions projected.

Recreational ORV Use Actions

The area would be designated as open for ORV use. Although open, ORV use would be limited by terrain to existing vehicle ways and trails. Use would continue at 150 visitor days per year.

All Wilderness Alternative

Wilderness Management Actions

The entire 5,650 acres of the Buffalo Creek WSA would be recommended for wilderness designation. Management of the area would be consistent with the Wilderness Management Policy. Coal leasing and mining would be prohibited. Oil and gas exploration could continue but development would be prohibited. Range projects would continue to be maintained. However, no new range improvement projects would be implemented. Cutting of posts and poles would be prohibited. ORV use would be prohibited. Specific actions are described under the appropriate action heading below.

Oil and Gas Exploration and Development Actions

The entire area would be open to geophysical exploration, but activities would be restricted to protect wilderness values. Motorized vehicles and underground explosives would be prohibited. The most likely scenario for exploration is that no seismic activities would occur. This is due to the constraints that would be placed on seismographic activity under wilderness management.

The entire 5,650 acres would be withdrawn from oil and gas leasing. Existing post-FLPMA leases (1983) of 5,012 acres would not be renewed upon expiration unless production had occurred. No development would occur on the 638 unleased acres.

The most likely scenario, based on drilling activity in the surrounding four townships, is that the two projected wells would not be drilled. The constraints that would be associated with wilderness management would make drilling post-FLPMA leases infeasible.

Existing Range Project Maintenance Actions

All maintenance activities are performed by the operator under cooperative agreements. Mechanical equipment would be used only when there is no practical alternative.

Maintenance activities associated with the nine miles of fence involve nonmotorized access once annually. Posts are replaced and wires are stretched using hand tools.

Maintenance activities for the water well includes downhole rehabilitation every 20 years. This requires the use of a drill rig mounted on large trucks. Such use would occur only when the ground was dry or frozen.

Maintenance of two springs should be done on an as needed basis and can be accomplished with hand tools. Access would be nonmotorized.

Maintenance of two pipelines involves system startup (bleeding air from the line) in the spring and drainage of

the system in the fall. This involves hand tools and non-motorized access. There is no surface disturbance involved with startup or draining the system. Repair of breaks occurs on the average of every 10 years. It involves vehicular access and hand tools or occasionally a backhoe. Each break involves approximately 20 square feet of surface disturbance, which requires recontouring and revegetating with native species.

New Range Project Construction Actions

No new range projects would be undertaken.

Vegetation Management Actions

Vegetation management would improve range condition on 689 acres from poor and fair to good. Techniques such as rest rotation or salting would be used.

The total current vegetative production is approximately 1773 tons per year. The total vegetative production would increase by 13%. One-fourth of current production is allocated to domestic livestock. This allocation is 1108 AUMs. One-fourth of the 13% increase in total vegetative production would be allocated to domestic livestock. These 144 AUMs would increase the allocation from 1108 to 1252 AUMs in the long-term.

Soil Erosion Actions

There would be no proposed developments to control erosion.

Wildlife Management Actions — Deer Habitat

There are no proposed habitat improvement projects or species introduction actions projected.

Recreational ORV Use Actions

The area would be designated as closed to ORV use. Recreational ORV use would decline from 150 visitor days per year to zero.

COMPARISON OF IMPACTS

Table 2-1, Comparison of Impacts, is a display of the impacts by alternative.

TABLE 2-1
Comparison of Impacts

Impacts	Alternative	
	Proposed Action (No Wilderness)	**All Wilderness**
	ZOOK CREEK WSA	
Impacts on Wilderness Values	The primitive recreation and supplemental values of the WSA would be retained. However, the sights and sounds of offsite coal mining would reduce naturalness and solitude on 20% of the area intermittently for a 5 year period.	The naturalness on 1% of the WSA would increase due to the revegetation of 3 miles of vehicle ways. Solitude would increase on 5% of the WSA due to reductions in the use of motorized equipment. However, the sights and sounds of offsite mining would reduce naturalness and solitude on 20% of the area intermittently for a 5 year period.
Impacts on Maintenance of Existing Range Projects	There would be no impacts on the maintenance of existing range projects.	Existing range project maintenance would continue, but would require additional labor time.
Impacts on Deer and Turkey Habitat	There would be no impacts on deer and turkey habitat.	There would be no impacts on deer and turkey habitat.
Impacts on Recreational ORV Use	There would be no impacts on recreational ORV use.	Recreational ORV use would decline from 25 to 0 annual visitor days.
	BUFFALO CREEK WSA	
Impacts on Wilderness Values	There will be a series of actions, which will each cause short-term impacts on naturalness. A seismograph operation will disturb seven acres for a year. Two gas wells will disturb five acres each for three years. A chiseling operation will disturb 587 acres for up to ten years. These impacts would be visible from as much as 20% of the WSA. Solitude would be reduced on as much as 40% of the WSA for a total period of 6 months by these activities.	The naturalness on 10% of the WSA would improve due to the revegetation of the 5 miles of vehicle ways. Solitude would be enhanced on 20% of the WSA due to the elimination of 150 visitor days of recreational ORV use and the reduction of motorized equipment used to maintain range developments.
Impacts on Oil & Gas Exploration, Leasing, and Development	There would be no impacts on the development of the oil and gas resources.	The opportunity to lease oil and gas would be foregone. The impact would be minimal in that the two wells are projected to not produce oil and gas.

TABLE 2-1 (Cont.)
Comparison of Impacts

Impacts	Alternative	
	Proposed Action (No Wilderness)	All Wilderness
	BUFFALO CREEK WSA (Cont.)	
Impacts on Maintenance of Existing Range Projects	There would be no impacts on existing project maintenance.	Existing range project maintenance would be accomplished using more hand labor.
Impacts on New Range Project Construction	There would be no impacts on the construction of new range projects.	The opportunity to increase vegetative production by mechanical treatment (chiseling) would be foregone.
Impacts on Vegetative Management	There would be a 22% increase in total vegetative production, AUM allocations, and cattle numbers in the long-term.	There would be an increase in total vegetative production, AUM allocations, and cattle numbers by 13% in the long-term.
Impacts on Soil Erosion	In the short term, there will be negligible increases in water and wind erosion from areas disturbed by oil and gas development and chiseling. In the longer term, there will be negligible decreases in wind and water erosion. This is a result of increased vegetation on 689 acres.	There will be negligible decreases in wind and water erosion due to increased vegetation of 689 acres of improved range and the revegetation of vehicle ways.
Impacts on Deer Habitat	There would be temporary displacement (6 months total) of deer populations while two oil and gas wells were drilled and 589 acres were chiseled. Over the long-term, vegetative production on noncritical summer deer range would increase by 22%, but would not substantially augment deer habitat.	Over the long-term vegetative production on noncritical summer range would increase by 13%, but would not substantially augment deer habitat.
Impacts on Recreational ORV use.	There would be no impacts on recreational ORV use.	Recreational ORV use would decline from 150 visitor days annually to 0.

CHAPTER 3
AFFECTED ENVIRONMENT

INTRODUCTION

This chapter describes the environment of the areas that would be affected by the two alternatives. The discussion begins with a description of the general area and a discussion of the resources found to be similar in both WSAs. Then resources which differ are discussed by WSA.

GENERAL DESCRIPTION

Climate

Southeastern Montana has a semi-arid, continental climate characterized by extreme weather variations on a yearly, seasonal, and daily basis. Precipitation ranges from 10 to 19 inches during an average year, but can vary by as much as 15 inches from one year to the next. Timely precipitation during the growing season makes dryland farming and mine land reclamation possible. About 20 percent of the precipitation falls during the winter, with 30 to 50 inches of snowfall.

Mean annual temperature is about 45F. Temperatures are lowest in January, with an average low of about 8F, and highest in July, with an average high of about 90F. The frost-free season ranges from 158 days at Miles City to 90 to 100 days at Decker. Relative humidity averages 60 percent. Mean annual evaporation ranges from 35 to 45 inches.

Air Quality

Both of the WSAs have been classified Class II air quality, which allows moderate deterioration associated with moderate, well controlled industrial and population growth. Air quality is within the applicable Class II State and National Ambient Air Quality Standards.

Topography

The areas lie within the unglaciated Missouri Plateau physiographic province. Nearly flat layers of sedimentary rock cut by streams form a dissected landscape of plateaus, rough breaks, flat bottomed valleys, and rolling plains. The harder sandstone and clinker capped ridges form benches while the softer shale forms gentle slopes or badlands.

The Zook Creek WSA consists of rugged breaks with elevations ranging from 3,200 feet in the east to 4,100 feet in the west. Zook and Whitten Creeks drain the southern half of the area. This area is characterized by high bluffs of red and white sandstone. The ridges between these creeks are extremely rugged and are composed of loose, rocky soil cut by frequent side drainages. The higher western portion of the WSA is covered with dense stands of ponderosa pine. The eastern part of the area is covered with sagebrush and grasses, with juniper and ponderosa pine trees scattered throughout. The northern slopes of the majority of breaks in the WSA are also covered with ponderosa pine. Deciduous trees, including cottonwoods, line the creeks draining eastward out of the area. Trees cover about 40% of the WSA.

The Buffalo Creek WSA contains some of the most dissected and distinctive breaks to be found along the Powder River. The area consists of a north-south ridge about 4,100 feet in elevation. Several rugged drainages run off the ridge to the Powder River on the west and Buffalo Creek on the east. These canyons drop about 600 feet from the rim to the valleys on the boundaries of the area. Over 50% of the area is covered with ponderosa pine with open areas of grass on the ridge tops. In many areas scoria (porcellanite), a bright red baked-clayrock, covers the canyon tops along the rim.

Diversity in the National Wilderness Preservation System (NWPS) (As of 3/83)

Due to the close proximity of the two WSAs, the analysis of diversity will be discussed jointly.

The Bailey-Kuchler system was used to classify all existing and potential WSAs of the NWPS into ecotype/landform types. It can be determined, using this classification, whether a potential WSA could expand the ecotype/landform diversity of the NWPS.

Both the Zook Creek WSA and the Buffalo Creek WSA are in Bailey-Kuchler Ecoregion 3110 subgroup 15. This is the Great Plains shortgrass prairie ecoregion and eastern ponderosa pine subgroup.

There are no representatives in the NWPS of this subgroup. There are two potential representations, i.e. those included in this plan.

There are two standard metropolitan statistical areas (SMSAs) identified by the U.S. Bureau of Census within five hours driving time of Zook Creek WSA and Buffalo Creek WSA. Billings, Montana, has a population of 66,800 and Casper, Wyoming, has a population of 51,046 (1980 census).

Billings and Casper are both within five hours driving time of several diverse wilderness areas. Presently there are 11 wilderness areas of approximately 3.5 million acres within five hours driving time of Billings. There are 18 wilderness areas of approximately 4.0 million acres within five hours driving time of Casper.

There are 37 administratively endorsed WSAs of approximately 3.5 million acres within five hours driving time of Billings. There are 35 administratively endorsed WSAs of approximately 3.7 million acres within five hours driving time of Casper. The two SMSAs are close to abundant wilderness and potential wilderness resources.

There are 82 other study areas of approximately 2.2 million acres within a five-hour driving time of Billings. There are 72 other study areas of approximately 1.5 million acres within five hours driving time of Casper.

ZOOK CREEK WILDERNESS STUDY AREA

Wilderness Characteristics

Size

The Zook Creek Wilderness Study Area (WSA) is located 26 miles southwest of Ashland in Rosebud County. It consists of approximately 8,438 acres. The WSA is a mile west of the Tongue River and just south of the Northern Cheyenne Indian Reservation. The area is bordered by private and state lands, except for one mile in the southwest. There the boundary separates public land, judged not to have wilderness characteristics during inventory, from the WSA. The area is approximately 3½ miles square. See Map 4.

Naturalness

Nearly all of Zook Creek appears natural. There are several minor developments, but they are screened by vegetation and topography. A majority of these developments are along the edges of the WSA. There are three miles of vehicle ways in the area. A faint vehicle way enters the area in T6S, R42E, Section 2 and ends at a windmill. There is a vehicle way in Sections 4 and 5 of T6S, R42E. Another vehicle way in T5S, R42E, Section 28 goes to a windmill in Section 29.

A reservoir was reconstructed during 1979 at the site of an older reservoir in T5S, R42E, Section 30. The old reservoir is silted in and the area is heavily vegetated. The replacement reservoir disturbs the immediate area of this rough drainage. A vehicle way extends for one mile into the WSA to this reservoir site.

Other developments include four other small reservoirs, three developed springs, two wells in the area, and seven miles of fence. See Table 3-1.

The east and west side Tongue River roads are visible from the WSA. Also, ranch facilities exist and activities occur adjacent to the area. Some of these can be seen from some ridges in the WSA while looking east or north. However, their magnitude is not significant.

Solitude

Zook Creek meets minimum requirements for outstanding opportunities for solitude. The extremely rugged terrain of the breaks provides significant topographic screening. The stands of ponderosa pine provide vegetative cover and screening in much of the area. Several drainages with 400- to 500-foot divides would separate visitors from each other without tending to funnel them into the same part of the area.

Primitive and Unconfined Recreation

This WSA meets minimum requirements for outstanding opportunities for primitive recreation, due to outstanding hiking and backpacking potential and because of a variety of other potential activities. The rough terrain, scenery and trees all contribute to opportunities for backpacking and related activities such as sightseeing and photography. Snowshoeing and cross country skiing could be enjoyed in Zook Creek. Hunting, especially for deer, presently occurs on this area.

TABLE 3-1
Zook Creek Project List

Type	JDR No.	Project Name	Legal Description
Spring	2114	Moreland Spring	T5S, R42E Sec. 30 SWNW
Well	7025	2nd Two-Way Well	T5S, R42E Sec. 29 NESE
Reservoir	7068	Rice Draw No. 2 Res.	T5S, R42E Sec. 30 NENW
Reservoir	67	Brown Cattle Co. Res.	T5S, R42E Sec. 33 NENE
Reservoir	111	Brown Cattle Co. Res.	T6S, R42E Sec. 11 NWNE
Well	4057	Zook Creek Well	T6S, R42E Sec. 2 SESW
Spring	210	A. Brewster Spring	T6S, R42E Sec. 5 SESW
Spring	216	A. Brewster Spring No. 2	T6S, R42E Sec. 5 SWSE
Reservoir	1375	Brewster Arnold Res.	T5S, R41E Sec. 25 NWSW
Fence	—	—	T5S, R42E Sec. 19
Fence	—	—	T5S, R42E Sec.29,31,32
Fence	—	—	T5S, R42E Sec. 31 T6S, R42E Sec. 2,3,4
Fence	—	—	T6S, R42E Sec. 5

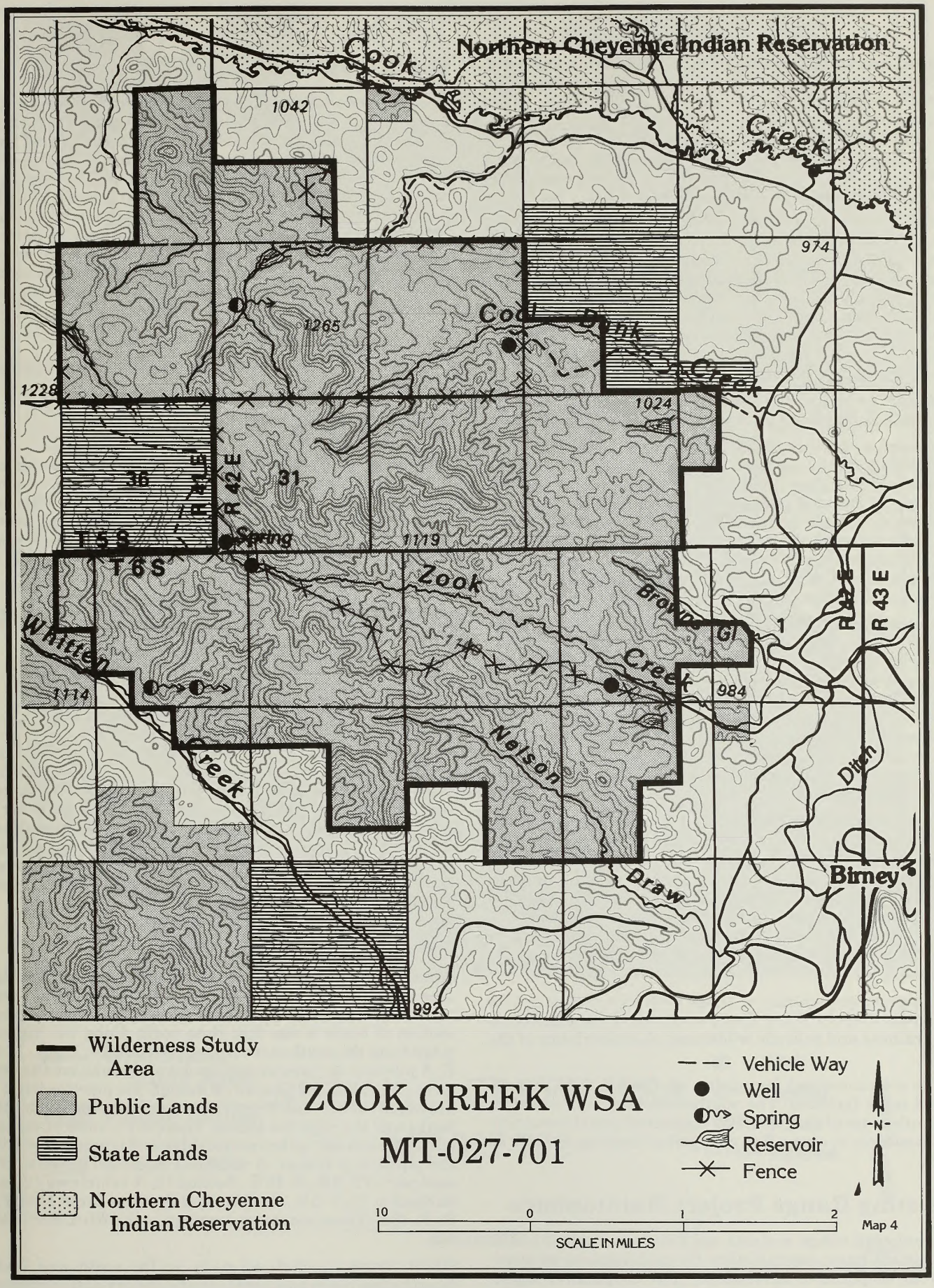
Supplemental Values

The vistas in this area provide scenic values. From the tops of ridges, one can see the Tongue River Valley and rugged breaks along it. To the south, the Big Horn Mountains of Wyoming stand out on the horizon.

Minerals

Coal is the primary known mineral resource in the Zook Creek WSA. A total of 464 million tons of coal with high and moderate development potential have been identified, all within the Tongue River Member of the Fort Union formation. High development potential includes coal with a 6:1 or less stripping ratio, 200 feet or less of overburden, and a thickness of five feet or greater. Moderate development potential includes coal not in the high potential category, with a 15:1 or less stripping ratio, 500 feet or less of overburden, and a thickness of five feet or greater.

Three coal beds with major reserves occur. From top to bottom, they are the Çanyon, Wall and Brewster-Arnold beds. There are several additional coal-bearing zones with insignificant reserves at strippable depths. In general, the coal is ranked subbituminous. Core samples taken within three miles of Zook Creek showed average as-received values of 4.9% ash, 0.29% sulfur, and 8,957 BTU/lb for the Wall bed (3 samples) and 7.5% ash, 0.40% sulfur, and 8,444 BTU/lb for the Brewster-Arnold bed (1 sample). No analyses have been made of the Canyon bed close to the WSA. Two analyses of the Canyon bed ten miles west of the WSA


Northern Cheyenne Indian Reservation
Cook Creek
1042
974
1265
Cool Drink Creek
1228
1024
36
31
R 42 E
T 5 S
T 6 S
Spring
1119
Zook Creek
Brown Gl
1
R 43 E
Whitten Creek
1114
984
Nelson Draw
Ditch
Birney
992
Wilderness Study Area
Public Lands
State Lands
Northern Cheyenne Indian Reservation
ZOOK CREEK WSA
MT-027-701
Vehicle Way
Well
Spring
Reservoir
Fence
-N-
10 0 1 2
SCALE IN MILES
Map 4

showed average values of 4.7% ash, 0.31% sulfur, and 8,418 BTU/lb. Analyses of four samples from the Brewster-Arnold bed several miles south and east of the WSA showed better quality values (average 5.1% ash, 0.40% sulfur, and 9,022 BTU/lb) than the one sample near the WSA (BLM Resource Evaluation, Billings, Montana and Matson and Blumer, 1973). There are no coal leases or exploration licenses in Zook Creek.

In Geological Survey Circular 902-A-P, it is noted that the WSA "... lies within the northern part of the Powder River basin in the area of the Tongue River syncline. It is assigned a low oil and medium gas potential. The cluster lies in a structural low near the margin of a basin that has not yielded abundant hydrocarbons in Montana. Although a significant number of possible reservoir rocks are present and possible stratigraphic traps may be present, possible source beds for hydrocarbons are generally immature."

There are no oil and gas leases in Zook Creek (9/88). There are no oil or gas fields in or within 30 miles of the WSA.

There are no known locatable or other leasable minerals. No mining claims are present. Known saleable minerals are clinker and sand and gravel. Clinker produced by the burning of the coal beds forms the plateau covering the highest elevations in the WSA. Smaller clinkered areas mark the outcrops of lower coal zones. Approximately 1,500 to 2,000 acres in the WSA are covered by clinker. Insignificant deposits of sand and gravel occur along the floors of the major drainages.

In Geological Survey Circular 902-A-P, it is noted that the WSA "... lies within the northern part of the Powder River basin in the area of the Tongue River syncline. It is assigned a low oil and medium gas potential for occurrence. The cluster lies in a structural low near the margin of a basin that has not yielded abundant hydrocarbons in Montana. Although a significant number of possible reservoir rocks are present and possible stratigraphic traps may be present, possible source beds for hydrocarbons are generally immature."

An open coal mine (MONTCO) is proposed for lands east of the Tongue River. Coal would be mined for railroad shipment. There would be no onsite coal conversion facilities. The geographic focus of current permitting is for processing facilities (crushers, railroad loading facilities and mining operations) approximately 12 miles northeast of the WSA. Transportation corridors (railroad lines, power supply lines, and highways) would be further north of the WSA.

The sights and sounds of these activities would not be apparent from the WSA. There would be no impacts on the naturalness and solitude wilderness characteristics of the WSA.

Plans are conceptual for mining southward from the proposed mine facilities. The southernmost extent would be two miles east of the WSA. It is estimated that these activities would occur over a five year period starting as early as 2000.

Existing Range Project Maintenance

The existing range projects are listed on Table 3-1. The permittees have responsibility for maintenance as specified in cooperative agreements. The cooperative agreements generally do not specify a schedule or techniques for maintenance.

Wildlife Habitat

There are two known sharp-tailed grouse leks within the Zook Creek WSA. They are in Sections 4 and 9, T. 6 S., R. 42 E. Winter range crucial to the continued survival of local mule deer populations is found within this area. This winter range includes portions of Sections 29, 30, 31, and 32, T. 5 S., R. 42 E. and Sections 3, 4, 5, 8, 9 and 10, T. 6 S., R. 42 E., which fall within the WSA. White-tailed deer winter range extending uphill from the Tongue River includes parts of Sections 1, 2, 10 and 11, T. 6 S., R. 42 E., which are within the WSA. Winter range is a crucial part of local whitetail habitat. A turkey wintering area to the north of the area extends into the WSA in Sections 19 and 30, T. 5 S., R. 42 E.

There is no fisheries habitat in the WSA.

There are no federally listed threatened or endangered species in the WSA.

Recreational ORV Use

It is estimated that 25 visitor days per year of recreational use occur. This is 4 x 4 ORV use associated with hunting and is likely to continue at the present level. The vast majority of this use occurs during the fall hunting season on existing vehicle ways. There are no visitor days spent backpacking.

BUFFALO CREEK WILDERNESS STUDY AREA

Wilderness Characteristics

Size

The WSA contains approximately 5,650 acres. It is located approximately 35 miles southwest of Broadus and five miles north of the Montana-Wyoming stateline. The area is just east of the Powder River. The WSA is rectangular in shape. It is approximately 2.5 miles wide (east-west) and 3.5 miles long. It is bordered exclusively by roads along the south boundary. The remainder of the boundary is private land or short sections of roads (either Buffalo Creek or east Powder River). See Map 5.

Naturalness

Almost all of the human improvements occur on the ridge tops, especially in the southern portion of the area. There are about 6 miles of fence in the area. The most obvious section of fence is one that runs north along the highest ridge from the southeast corner of Section 24, T. 9 S., R. 48 E. A pipeline and associated stockwater tanks are the next most obvious signs of man, although the pipeline itself is almost invisible. The only evidences of the pipeline are the tanks and the pipeline drains. There are 5 miles of vehicle ways. Most is along the central ridge and is associated with the pipeline or fences. A windmill is located in the northeast part of T. 9 S., R. 48 E., Section 12. A vehicle way exists in Section 35, T. 8 S., R. 48 E., and Sections 2 and 11 of T. 9 S., R. 48 E. There are several springs in the WSA. See Table 3-2.

Offsite scenes include oil pads on the north and south boundaries, roads adjacent to the boundary and residences to the west. These developments and portions of those

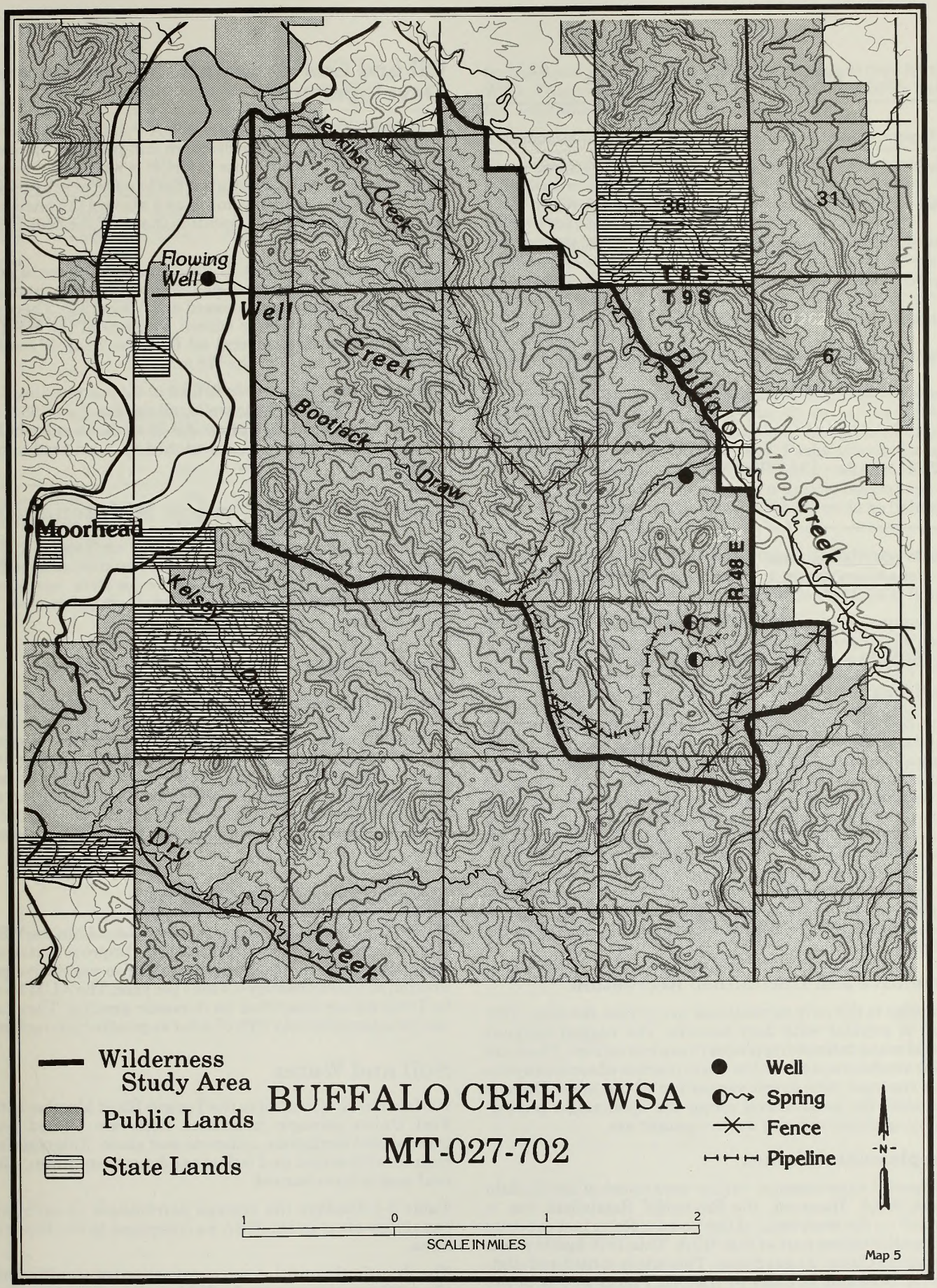

Jenkins Creek
Flowing Well
Well
Creek
Bootjack Draw
Buffalo Creek
Moorhead
Kelsey Draw
Dry Creek
36
31
6
T8S
T9S
R48E
Wilderness Study Area
Public Lands
State Lands
BUFFALO CREEK WSA
MT-027-702
Well
Spring
Fence
Pipeline
N
1 0 1 2
SCALE IN MILES
Map 5

TABLE 3-2
Buffalo Creek WSA Project List

Type	JDR No.	Project Name	Legal Description
Fence	411	E&E Simpson Fence	T9S, R48E Sec. 11, 14
Well	2571	Simpsons Well No. 1	T9S, R48E Sec. 12 NWNE
Spring	4084	Simpsons Spring	T9S, R48E Sec. 13 SWNE
Spring	4086	Three Bar Spring	T9S, R48E Sec. 13 NWNE
Pipeline	6697	Dry Creek Pipeline	T9S, R48E Sec. 10,11, 13,14,23
Pipeline	6698	Buffalo Creek Pipeline	T9S, R48E Sec. 13
Fence	6827	Drybo Fence	T9S, R48E Sec. 13,14,23,24 T9S, R49E Sec. 18
Fence	—	Dry Buffalo Fence	T8S, R48E Sec. 34,35 T9S, R48E Sec. 2,11

roads are visible from a few ridges in the area. Offsite scenes are not significant due to their low frequency or the small magnitude of their appearance.

In summary, most of the WSA contains no evidence of man's influence and the imprints of man that do exist do not degrade the naturalness of the area.

Solitude

The Buffalo Creek WSA meets minimum standards for outstanding opportunities for solitude because of the rugged terrain and widespread cover of trees. The best opportunities for solitude occur in the many canyons developing off the main ridge in this area. Most of these canyons have numerous side drainages and are heavily vegetated with ponderosa pine, especially the northern slopes. The ridges in the area would offer lesser opportunities for solitude, because they are narrow in most places and generally flat with only a grassy cover. This could pose a problem for visitors being shielded from each other. Many visitors might tend to hike the easier terrain on the ridges.

Primitive and Unconfined Recreation

Hunting is the only recreational use within the area. This area is popular with deer hunters. The rugged canyons would make interesting places to explore on foot. There are a few sandstone walls in the lower reaches of some canyons that contrast with green vegetation of the area. There is potential for horse travel along the open ridge, photography, geologic viewing and overnight use.

Supplemental Values

No special supplemental values were noted at the Buffalo Creek WSA. However, the Reynolds' Battlefield site is located on the west bank of the Powder River just opposite the northwestern part of this WSA. This 1876 battle was a prelude to Custer's Last Stand. This site is considered eligible for National Register of Historic Places and is in the process of being evaluated.

Oil and Gas Exploration, Leasing and Development

In Geological Survey Circular 902-A-P, it is noted that the WSA "... lies near the southeastern margin of the Montana portion of the Powder River basin. It is assigned a moderate oil and high gas potential on the basis of nearby hydrocarbon production in Wyoming and also on the basis of a more favorable structural location than ..." the Zook Creek WSA.

There are no acres of pre-FLPMA and 5,012 acres of post-FLPMA oil and gas leases in Buffalo Creek. Six hundred thirty-eight acres were unleased as of July 1983. There are no oil or gas fields in or within 15 miles of the WSA in Montana. However, several oil fields occur in Wyoming about 10 miles south of the WSA.

Twenty-six wells have been drilled in the surrounding four townships. Eight of these wells, all drilled since 1984, are into the Minnelusa formation. All 26 wells were dry holes, which were plugged and abandoned with no production. (BLM-5/89)

Existing Range Project Maintenance

The existing range projects are listed on Table 3-2. The permittee has responsibility for maintenance as specified in cooperative agreements. The cooperative agreement generally does not specify a schedule or techniques for maintenance.

New Range Project Construction

The only new range project which may be feasible is 587 acres of mechanical treatment. Mechanical treatment is the treatment by mechanical means of an area of range land to change soil structure or vegetative composition. Techniques include pitting, plowing and seeding, chiseling, scalping, etc. Contour furrowing is not feasible in the soil types associated with this WSA. Chisel plowing of 587 acres is proposed subject to soil, cultural, and other surveys.

Vegetation Management

There is one operator who grazes livestock within the WSA. His allotment is categorized in the "I" (Improve) category. (See Table 3-3) One AUM is equivalent to vegetative production of approximately 0.4 tons per year. The AUM levels in Table 3-3 are identified for domestic grazing. They constitute approximately 25% of total vegetative production.

Soil and Water

Buffalo Creek is located in the Tongue River Member of the Fort Union geologic formation. Soils are formed from interbedded sandstone, siltstone and shale. Ridgetops are capped with scoria and baked sandstone remaining after coal seams have burned.

Table 3-4 displays the acreage percentages of each land capability class in the WSA as compared to the Resource Area.

The distribution of the percentages varies significantly. Class III and IV types for the WSA are less than 40% of that

TABLE 3-3
Range Allotments in Buffalo Creek WSA

Record Number	Total Ranch AUMs*	Total BLM AUMs	Total BLM Acres	Public Lands Within WSA BLM AUMs	Public Lands Within WSA BLM Acres
3782	12,000	1,165	6,575	0	0
3879	12,660	2,939	13,626	1,108	5,650
TOTAL	24,660	4,104	20,201	1,108	5,650

*Includes everything within operator's ranch.

Source: BLM, 1983

TABLE 3-4

Land Capability Class Comparison
Buffalo Creek WSA and Resource Area

	III	IV	VI	VII	VIII
Resource Area	8%	23%	45%	23%	1%
Buffalo Creek WSA	11%	1%	84%	0%	4%

Source: BLM 1983.

for the Resource Area. Class VI is the dominant type for the WSA. This makes the WSA most suitable for wildlife habitat, watershed protection and grazing uses.

Erosion potentials for this area are moderate to high.

The east half of the Buffalo Creek WSA is drained by tributaries of Buffalo Creek. The west half is drained by Jenkins, Well, and Dry Creeks, and Bootjack Draw. All are ephemeral, flowing only in response to snowmelt or summer storms and all are tributary to the Powder River. Snowmelt and rainfall generally percolate into numerous exposed clinker beds and reappear as seeps and springs where the base of these beds crop out. This action tends to reduce and prolong surface runoff peaks.

Wildlife Habitat

This WSA occurs within a large area which has not been surveyed for deer and antelope use. However, the WSA is recognized as an area of high mule deer use by the Montana Department of Fish, Wildlife and Parks (Steve Knapp, 1983). There are some unidentified raptor nests among the cliffs on the northeast border and a prairie falcon nest on the east border but outside of the WSA. There is no fisheries habitat in the WSA.

There are no federally listed threatened or endangered species in the WSA.

Recreational ORV Use

It is estimated that 150 visitor days per year of recreational use occur and will continue at these levels. This is 4X4 ORV use associated with hunting. The vast majority of this use occurs during the fall hunting season on existing vehicle ways. This use is partially due to S-60 management and adequate legal access. The S-60 program is a cooperative effort between the BLM and grazing permittees to provide hunting opportunities on large blocks of mixed public and private lands. A portion of the WSA is within an S-60 area which extends considerably outside of the WSA boundary. There are no visitor days spent backpacking.

CHAPTER 4
ENVIRONMENTAL CONSEQUENCES

INTRODUCTION

This Chapter provides an indepth analysis of the issue topics identified as significant for the proposed action and alternatives. Discussion of impacts is distinguished for short term (5 years) and long term (50 years) only where they differ. Climate, air quality, and topography discussed at the beginning of Chapter 3, Affected Environment, were not analyzed further since these components would not be significantly affected by any of the alternatives.

ZOOK CREEK WILDERNESS STUDY AREA

Proposed Action (No Wilderness/No Action Alternative)

Under this nonsuitable recommendation, there would be no irreversible or irretrievable commitment of resources.

Impacts on Wilderness Values

Naturalness

Maintenance of existing range projects using motorized equipment would continue to occur. Once a year, a vehicle would be used to inspect and repair the seven miles of fence. On an average of every five years, heavy equipment would be used to remove sediment from the bottom of one of the four reservoirs and place it on the sides below the high water mark. Once every 10 years, on an average, a drill rig mounted on a large truck would be used to rehabilitate one of the two wells. As needed, vehicles would be used to maintain the three springs. There would be no additional surface disturbance in the form of vegetative trampling associated with the use of motorized equipment because most of the use will be on existing vehicle ways. Recreational ORV use would continue at 25 visitor days per year. This would continue the vegetative trampling and compaction along the three miles of vehicle ways in the area. The vegetative trampling associated with the fences, vehicle ways and water sources would continue to be substantially unnoticable. There are no new impacts created by these actions.

The MONTCO coal mine is projected to occur on lands east of the Tongue River. Coal would be mined for railroad shipment and there would be no onsite coal conversion facilities. Processing facilities (crushers, railroad loading facilities and mining operations) would be built approximately 12 miles northeast of the WSA. Transportation corridors (railroad lines, power supply lines, and highways) would be still further north of the WSA. The sights and sounds of these construction and mining activities would not be visible from the WSA. There would be no impacts on naturalness and solitude in the WSA.

Mining would eventually extend south to two miles east of the WSA. It is estimated that these activities would occur over a five year period starting as early as 2000. The sights from the mining activities (dragline and trucks) would be apparent from approximately 20% of the WSA. This would be primarily from the central ridgetops of the WSA, which are generally three to four miles away.

Solitude

There are no actions which would impact opportunities for solitude by reducing vegetative or topographic screening. The mechanical equipment activity associated with existing project maintenance one week annually and 25 visitor days annually of recreational ORV use during hunting season would continue to have a slight periodic impact on solitude but no increased levels are projected.

Mining would occur within two miles of the WSA for a five year period. The sounds of the operation would be audible when the wind is from the east, which is one-fourth of the time. Even then, they would be audible only in the 20% of the WSA from which the activity is visible.

Primitive and Unconfined Recreation

The area has outstanding opportunity for primitive and unconfined recreation due to the diversity of potential recreation activities, such as hiking, hunting, cross country skiing, and horseback riding. These opportunities would be retained with no new impacts or changes in use levels or opportunities projected.

Supplemental Values

The only supplemental value identified for the area is the scenic vista provided by the Big Horn Mountains to the south in Wyoming. There are no actions projected which impact these supplemental values.

Conclusion — The primitive recreation and supplemental values of the WSA would be retained. However, the sights and sounds of offsite coal mining would reduce naturalness and solitude on 20% of the area intermittently for a 5 year period.

Impacts on Maintenance of Existing Range Projects

All maintenance of projects is performed by the operators under cooperative agreements. Maintenance of existing projects would continue assisted by motorized equipment. Other actions (recreational ORV use) would not impact the maintenance of existing range projects.

Conclusion — There would be no impacts on the maintenance of existing range projects.

Impacts on Deer and Turkey Habitat

Motorized equipment would be used annually to maintain seven miles of fence. On an average of every five years

heavy equipment would be used to remove sediment from the bottom of one of four reservoirs and place it on the sides below the high water mark. Once a decade a drill rig would be used for downhole maintenance of the two wells. Maintenance of springs would occur as needed. This low Level of surface disturbance by motorized equipment would continue and therefore has no impact on habitat. Recreational ORV use of 25 visitor days annually would also have no impact on deer and turkey habitat.

Conclusion — There would be no impacts on deer or turkey habitat.

Impacts on Recreational ORV Use

The 25 days of recreational ORV use is expected to continue at that current level.

Conclusion — There would be no impacts on recreational ORV use.

All Wilderness Alternative

Impacts on Wilderness Values

Naturalness

Maintenance on four fences and three springs, would continue with actions under the minimum tool policy. However, every 10 years there would be vegetative trampling and compaction associated with the use of motorized equipment and drill trucks for the downhole maintenance of the two water wells. There would be additional vegetative trampling every 5 years associated with the use of heavy equipment (bulldozers) for the maintenance of one of the four reservoirs. Springs and fences would be maintained using hand tools. Due to the prohibition of ORV use, the current levels of use would decline from 25 visitor days to zero. The elimination of motorized equipment for fence and spring maintenance and of ORV use would result in the revegetation of vehicle ways. The existing level of naturalness would be maintained with slight increases on less than 1% of the WSA due to the elimination of most motorized vehicle use.

The MONTCO coal mine is projected to occur on lands east of the Tongue River. Coal would be mined for railroad shipment and there would be no onsite coal conversion facilities. Processing facilities (crushers, railroad loading facilities and mining operations) would be built approximately 12 miles northeast of the WSA. Transportation corridors (railroad lines, power supply lines, and highways) would be still further north of the WSA. The sights and sounds of these construction and mining activities would not be visible from the WSA. There would be no impacts on naturalness and solitude in the WSA.

Mining would eventually extend south to two miles east of the WSA. It is estimated that these activities would occur over a five year period starting as early as 2000. The sights from the mining activities (dragline and trucks) would be apparent from approximately 20% of the WSA. This would be primarily from the central ridgetops of the WSA, which are generally three to four miles away.

Solitude

Maintenance using motorized equipment would occur every 10 years for the downhole maintenance of two water wells. In addition, every five years motorized equipment (bulldozers) would be used for the maintenance of one of the four reservoirs. However, fence and spring maintenance would be done with hand tools. Solitude would be enhanced on approximately 5% of the WSA due to the elimination of ORV use and of the use of motorized equipment for spring and fence maintenance.

Mining would occur within two miles of the WSA for a five year period. The sounds of the operation would be audible when the wind is from the east, which is one-fourth of the time. Even then, they would be audible only in the 20% of the WSA from which the activity is visible.

Primitive and Unconfined Recreation

The area has outstanding opportunity for primitive and unconfined recreation due to the diversity of potential recreation activities, such as hiking, hunting, cross country skiing, and horseback riding. These opportunities would be retained, with no new impacts or changes in use levels or opportunities projected.

Supplemental Values

The only supplemental value identified for the area is the scenic vista provided by the Big Horn Mountains to the south in Wyoming. There are no actions projected which impact these supplemental values.

Conclusion — The naturalness on 1% of the WSA would increase due to the revegetation of three miles of vehicle ways. Solitude would increase on 5% of the WSA due to reductions in the use of motorized equipment. However, the sights and sounds of offsite mining would reduce naturalness and solitude on 20% of the area intermittently for a five year period.

Impacts on Maintenance of Existing Range Projects

Motorized vehicle use would be prohibited for all maintenance, except for downhole well maintenance of two wells and the maintenance of the four reservoirs. The maintenance of the four fences and three springs and other well maintenance would be done with hand labor.

Conclusion — Existing project maintenance would continue, but would require additional labor time.

Impacts on Deer and Turkey Habitat

Deer and turkey habitat and populations would be maintained. Due to the reductions in the already low levels of surface disturbance and motorized use in the WSA, however the habitat and populations would not increase.

Conclusion — There would be no impacts on deer or turkey habitat.

Impacts on Recreational ORV Use

Recreational ORV use would be prohibited. The annual 25 visitor days of use would decline to zero. Public land that offers similar opportunities for recreational ORV use is located throughout the vicinity. Therefore, recreational ORV use foregone in this area would be absorbed on nearby public lands.

Conclusion — Recreational ORV use would decline from 25 to 0 annual visitor days.

BUFFALO CREEK WILDERNESS STUDY AREA

Proposed Action (No Wilderness/No Action Alternative)

Under this alternative, there are no irreversible or irretrievable commitments of resources.

Under this alternative, the entire WSA would be recommended as nonsuitable for wilderness. Impacts on wilderness characteristics would occur from oil and gas leasing and development, new range project construction, and recreational ORV use.

Impacts on Wilderness Values

Naturalness

Seismographic exploration would be conducted once along seven miles of line using four large (30 ton) vibroseis trucks. These four trucks compress an 8 foot by 40 foot patch of vegetation every 100 yards along the seven mile path. The total area involved is approximately seven acres. Grasses would regain their undisturbed appearance in approximately one month. Forbs and brush would regain their appearance within a year. The impact on naturalness would be apparent over approximately 0.5 percent of the area for a year.

Two oil and gas wells would be drilled on the WSA. Each well would have a three acre pad on which drilling operations would occur. Surface disturbance would include stripping and stockpiling topsoil and the construction of a pit for storage of drilling mud. In addition, one mile of temporary access road would be constructed from the boundary of the WSA to each pad. This road would be 16 feet wide and flat bladed, which would result in an additional 2 acres of surface disturbance. It is projected that no production would occur and so each of the two wells would be plugged and abandoned. The construction activities associated with each of the wells would occur over a two month period. The surface disturbance associated with them would be reclaimed. This involves replacing topsoil, recontouring, and revegetating with native species. Reclamation activities are initiated in the spring or fall after plugging and abandonment (i.e. within 6 months). Vegetation would be reestablished within three years.

During the two month drilling phase of each well, the impact on naturalness would be massive and apparent over five percent of the WSA. For approximately three years after the drilling activity and during the reestablishment of vegetation, the impact on naturalness would be apparent in the vicinity of the activity on the pad and temporary access road. Thereafter, the impact on naturalness would be negligible.

The existing range project management would create surface disturbance of about 20 square feet, ten years along the existing pipelines. There would be some vegetative trampling associated with motorized vehicle use which would continue to occur for the maintenance of the nine miles of fence, two springs and one water well. The impacts on the apparent naturalness of the area would be slight and maintained at existing levels.

Mechanical treatment will be done on 587 acres of the WSA. It is projected that this would be done by chiseling, which moves about one-third of the vegetation and produces surface disturbance over the entire area. The total vertical relief is approximately one foot. While it is being done (approximately 2 months), the use of a tractor and associated equipment would be visible and reduce the naturalness on 20% of the WSA. Due to increased water penetration into and nitrogen release from the operation, vegetative growth is extremely rapid. For 10 years thereafter, the surface disturbance would be apparent from approximately 20 percent of the WSA. Thereafter, the visual patterns would diminish. Since only a small part of the vegetation is destroyed, revegetative growth is rapid, and the treatment occurs on essentially level ground. There is no additional erosion.

Vegetative production would increase by 22%. One-fourth or 1108 AUMs of current production is allocated to domestic livestock grazing and one-fourth of the 22% or 244 AUMs increase in vegetative production would also be allocated to domestic livestock. This increase could be utilized by keeping the current numbe r of cattle in the allotment for a longer period of time or increasing the number of cattle. It is projected that cattle numbers would increase by 22% over the long-term.

Most of the time during heavy visitor use, the cattle are in the Buffalo Creek drainage, a portion of which is in the WSA. As such, they are most often within view from the ridges in the eastern 20% of the WSA. The additional cattle would cause no increases in impact on the perceived naturalness of the WSA due to the increase in available forage.

ORV use would continue at 150 visitor days annually. The use would maintain the existing five miles of vehicle ways by continuing the compaction and surface disturbance associated with their passage. The line forms created by the vehicle ways would continue to have a negligible impact on naturalness.

Solitude

There are no actions which would impact opportunities for solitude by reducing vegetative or topographic screening or the size of the area. Activity associated with seismographic activity would be audible from 30 percent of the area once for a one week period. The activity associated with the drilling of two oil and gas wells and the chiseling treatment would be within hearing distance from 40% of the WSA. So for 6 months, the opportunities for solitude would be degradated over 30% of the WSA. Recreational ORV use would continue at 150 visitor days per year, primarily during hunting season. This would continue to degrade solitude, but there would be no new impacts on solitude nor changes in use levels or opportunities projected.

Primitive and Unconfined Recreation

The area does not have outstanding opportunities for primitive and unconfined recreation. The seismographic activity, surface treatment, and the drilling of two oil and gas wells are intermittent and not projected to occur during hunting seasons. Therefore, they will not have a long-term impact on primitive recreation or the diversity of opportunity for primitive recreation.

Supplemental Values

There are no ecological, geological or other features of scientific, educational, scenic or historical values identified for the area. As a result, there are no impacts on supplemental values.

Conclusion — There will be a series of actions which will each cause short-term impacts on naturalness. A seismograph operation will disturb seven acres for a year. Two gas wells will disturb five acres each for three years. A chiseling operation will disturb 587 acres for up to ten years. These impacts would be visible from as much as 20% of the WSA. Solitude would be reduced on as much as 40% of the WSA for a total period of six months by these activities.

Impacts on Oil and Gas Exploration and Development

It is projected that the entire area would be leased for oil and gas. There would be no constraints placed on exploration or development attributable to wilderness review of the area. Two wells would be drilled. It is anticipated that they would be plugged and abandoned without production.

Conclusion — There would be no impacts on the development of the oil and gas resources.

Impacts on Maintenance of Existing Range Projects

The existing range projects (nine miles of fence, two springs, two pipelines and one water well) would be maintained using motorized vehicles consistent with cooperative agreements. There would be no restraints placed on their maintenance to protect wilderness characteristics.

Conclusion — There would be no impacts on existing project maintenance.

Impacts on New Range Project Construction

The mechanical treatment by chiseling is projected to occur on 587 acres.

Conclusion — There would be no impacts on the construction of new range projects.

Impacts on Vegetation Management

Of the current vegetative production, one-fourth or 1108 AUMs are allocated to the grazing of domestic livestock. Chiseling, a form of mechanical treatment, on 587 acres would result in a 21% increase in total vegetative production. Vegetative management actions, such as salting or rest rotation, would result in the remaining 102 acres of poor and fair range improving to good. This would result in a 1% increase in total vegetative production. One-fourth of the 22% increase or 235 AUMs would be allocated to domestic livestock. It is projected that cattle numbers would increase by 22% in the long-term.

There would be negligible short-term impacts on vegetative production from the surface disturbance associated with oil and gas development and new range project construction.

There would be a negligible impact on vegetative production from the trampling associated with existing range project maintenance using mechanical equipment and recreational ORV use.

Conclusion — There would be a 22% increase in total vegetative production, AUM allocations, and cattle numbers in the long-term.

Impacts on Soil Erosion

In the short term, surface disturbance on 10 acres associated with oil and gas development would increase water and air erosion of soil. There would be increased surface runoff from the disturbed areas. The reestablishment of vegetation would require approximately 3 years. Then the increase in soil erosion and surface water runoff would decline to the geologic average rates for the area. Chiseling of 587 acres would not increase erosion, due to increased water penetration and rapid revegetation. However, there would be negligible increases in wind erosion.

Existing range project maintenance of nine miles of fences, two pipelines, two springs and one well and recreational ORV use would continue at current levels. There would be no new impacts created by these actions.

In the long term, erosion would decrease immeasurably, due to increased vegetation on 689 acres.

Conclusion — In the short term, there will be negligible increases in water and wind erosion from areas disturbed by oil and gas development and chiseling. In the longer term, there will be negligible decreases in wind and water erosion. This is a result of increased vegetation on 689 acres.

Impacts on Deer Habitat

While it would be occurring, the mechanical activity associated with drilling the two oil and gas wells and chiseling treatment would displace deer and turkey populations. This displacement would be for two months for each of the three activities. Grouse leks would be avoided and so not impacted. Continued intermittent mechanical activities associated with existing range project maintenance and 150 days of recreational ORV use would have no new impacts on wildlife populations.

Vegetative management and chiseling would result in a 22% increase in vegetative production. Three-fourths of the increase would be allocated to watershed and wildlife. This increased vegetative production over the long term would constitute a 22% increase in current levels of deer forage. However, this is on noncritical summer range and does not substantially augment deer habitat.

Conclusion — There would be temporary displacement (six months total) of deer populations while two oil and gas wells were drilled and 587 acres were chiseled. Over the long-term, vegetative production on noncritical summer deer range would increase by 22%, but would not substantially augment deer habitat.

Impacts on Recreational ORV Use

The 150 days of recreational ORV use is expected to continue at the current level.

Conclusion — There would be no impacts on recreational ORV use.

All Wilderness Alternative

Under this alternative, the entire WSA would be recommended as suitable for wilderness. Impacts on wilderness characteristics would occur from existing range project maintenance and would be negligible. The wilderness characteristics of naturalness and solitude would be

enhanced by the prohibition of oil and gas leasing and development actions, new range project construction, and recreational ORV use.

Impacts on Wilderness Values

Naturalness

There would be no seismographic or drilling for oil and gas activity. Mechanical treatment of vegetation (chiseling) would be prohibited and no other new project construction is planned. Maintenance of nine miles of fence, two springs, and most annual pipeline and well work with hand tools would cause no surface disturbance. Existing range management actions would create surface disturbance for the repair of leaks in pipelines. This would involve about 20 square feet every ten years along the existing pipelines. Every 20 years there would be some vegetative trampling associated with the use of motorized equipment and drill trucks for the downhole maintenance of the one water well. The well is less than one-quarter mile from the east boundary of the WSA. However, there would be no soil compaction associated with this well maintenance, as it would occur while the ground was frozen. These impacts on the naturalness of the area would be negligible.

Vegetative production would increase by 13%. One-fourth of current production is allocated to domestic livestock grazing and one-fourth of the 13% increase in vegetative production would also be allocated to domestic livestock. This increase could be utilized by keeping the current number of cattle in the allotment or increasing the number of cattle. it is projected that cattle numbers would increase by 13% over the long-term.

Most of the time during heavy visitor use, the cattle are in the Buffalo Creek drainage, a portion of which is in the WSA. As such, they are most often within view from the ridges in the eastern 20% of the WSA. The additional cattle would cause no increases in impact on the perceived naturalness of the WSA.

Due to the prohibition of recreational ORV use, the current levels of use would decline from 150 visitor days to none. This would result in the revegetation of five acres associated with five miles of vehicle ways. This would enhance the naturalness on the 10% of the WSA from which the vehicle ways are visible.

Solitude

There would be no seismograph oil and gas activity and no chiseling. Existing range project maintenance using motorized equipment every 20 years would occur on the one water well. Maintenance of six miles of fence and two springs and most annual pipeline and well maintenance work would be done with hand tools. Annual recreational ORV use would decline from 150 days to zero. The use is primarily during the full hunting season along the central ridge of the WSA. The use is audible intermittently from approximately 20% of the WSA. As a result of the elimination of ORV use and the reduction in mechanized equipment use, solitude would be enhanced on 20% of the WSA.

Primitive and Unconfined Recreation

The area does not have outstanding opportunities for primitive and unconfined recreation. No action would change the opportunities for primitive recreation or the diversity of opportunity for primitive recreation.

Supplemental Values

There are no ecological, geological, or other features of scientific, educational, scenic or historical values identified for the area. As a result, there are no impacts on supplemental values.

Conclusion — The naturalness on 10% of the WSA would improve due to the revegetation of the five miles of vehicle ways. Solitude would be enhanced on 20% of the WSA due to the elimination of 150 visitor days of recreational ORV use and the reduction of motorized equipment used to maintain range developments.

Impacts on Oil and Gas Exploration and Development

With their prohibition, the opportunities for oil and gas leasing and development would be foregone.

Conclusion — The opportunity to lease and develop oil and gas would be foregone. The impact would be minimal in that the two wells are projected to not produce oil and gas.

Impacts on Existing Range Project Maintenance

Motorized vehicle use would be prohibited for all maintenance, except for downhole well maintenance and, if necessary, repairing pipeline leaks. The maintenance of nine miles of fences, two springs, and other well and pipeline maintenance would be done with hand labor.

Conclusion — Existing range project maintenance would be accomplished using more hand labor.

Impacts on New Range Project Construction

The opportunity to improve range condition by mechanical treatment (chiseling) would be foregone.

Conclusion — The opportunity to mechanically treat 587 acres by chiseling would be foregone.

Impacts on Vegetation Management

Of the current vegetative production, one-fourth or 1108 AUMs are allocated to the grazing of domestic livestock. Vegetative management actions to implement a grazing system would improve 689 acres of poor and fair condition range to good. This would increase vegetation production by 13%. Of this, one-fourth or 144 additional AUMs would be allocated to domestic livestock. It is projected that cattle numbers would increase in time by 13% in the long-term.

Conclusion — There would be an increase in total vegetative production, AUM allocations, and cattle numbers by 13% in the long-term. The opportunity to increase an additional 9% would be foregone.

Impacts on Soil Erosion

There would be no oil and gas activities and hence no impacts on soil erosion or water quality.

Existing range project maintenance would generally be done without the use of motorized equipment. The exception would be for the downhole maintenance of one water well and, if necessary, for repair of pipeline leaks which cause minor vegetative trampling. This would have no measurable effect on soil erosion or water runoff. Twenty

square feet would be disturbed every ten years to repair leaks in pipelines.

The 13% increase in vegetative production associated with the improvement of 689 acres of poor and fair condition range would cause negligible decrease in soil erosion losses and runoff.

ORV activity would decline from current levels of 150 visitor days per year to zero. This would result in the revegetation on five acres of vehicle ways, which would result in negligible decreases in wind and water erosion.

Conclusion — There will be negligible decreases in wind and water erosion due to increased vegetation on 689 acres of improved range and the revegetation of vehicle ways.

Impacts on Deer Habitat

The only mechanical activity would occur every 20 years for the downhole maintenance of the one existing water well and, if necessary, for the repair of pipeline leaks. This would have no displacement impact on wildlife populations nor impacts on habitat.

Vegetative management would result in a 13% increase in vegetative production. Three-fourths of the increase would be allocated to watershed and wildlife. This increased vegetative production constitutes a 13% increase in current levels of deer forage in the long-term. However, this would be on noncritical summer range and so would not substantially augment deer habitat.

Conclusion — Over the longterm vegetative production on noncritical summer range would increase by 13%, but would not substantially augment deer habitat.

Impacts on Recreational ORV Use

Recreational ORV use would be prohibited. The annual 150 visitor days of use would decline to zero. Public land that offers similar opportunities for recreational ORV use is located throughout the vicinity. Therefore, recreational ORV use foregone in this area would be absorbed on nearby public lands.

Conclusion — Recreational ORV use would decline from 150 visitor days annually to 0.

CHAPTER 5
CONSULTATION AND COORDINATION

PREPARATION

The Powder River Wilderness Suitability Study/Final Environmental Impact Statement (FEIS) was prepared by the Team Leader and the District Program Leader based on the Powder River Resource Area Resource Management Plan (RMP)/EIS. The RMP/EIS, both draft and final, were prepared by specialists from the Miles City District Office with assistance and guidance from the Montana State Office (BLM). Disciplines and skills used to develop the RMP/EIS included: vegetation and rangeland use, geology, hydrology, climate, recreation, soils, cultural resources, realty, paleontology, recreation, sociology, economics, wildlife, fisheries, agronomy, graphics, animal science, forestry, editing, printing, public affairs, and typing.

LIST OF PREPARERS

The following people prepared the Wilderness Suitability Study Report/FEIS (descriptions are up to date as of April 8, 1985):

Judith A. Meier (Bartley), Team Leader
BS Forestry, MS Recreation/Land Use Planning, University of Missouri at Columbia. She prepared initial drafts of the entire Wilderness Suitability Study. She was responsible for coordinating with MSO on maps in the document. She was with BLM for two years.

Chris Roholt, District Program Leader for Wilderness
BS Mathematics and Economics, MS Forestry/Economics, University of Montana. He provided guidance for Bureau policy and guidelines, and served as project manager after Judy Meier left the BLM. He has been with BLM for ten years.

Additional information was compiled by Linda McNurlin, Fred Wambolt, Jim Albano, Marty Griffith and Jamie Connell. Barb Hamburg, Carol Smith and Yvonne Wood prepared the word processing.

The following people prepared portions of the RMP which were used to prepare this document (descriptions are up to date as of the final RMP/EIS):

Jay Guerin, Project Leader
BS Journalism, University of Wyoming. He was responsible for the overall development and coordination of the RMP project and also served as team leader. He has been with BLM for eight years.

Dave Wessman, Technical Coordinator
BS Forest Watershed Management, Utah State University. He was responsible for coordinating schedules, accuracy of technical information, and preparing the Final RMP. He was also responsible for the graphic displays and coordination with MSO. He has been with BLM for eight years.

Ed Heffern, Coal Issue Leader
BS and MS Geology, Stanford University. He developed and wrote the coal, geology, topography and other minerals sections of the RMP. He has been with BLM for seven years.

Fred Wambolt, Vegetation Utilization Issue Leader
BS Agriculture Production, Montana State University, AA Miles Community College. Fred developed and wrote the vegetation and livestock sections of the RMP. He has been with BLM for eight years.

Chris Roholt, Wilderness Issue Leader
BS Mathematics and Economics, MS Forestry/Economics, University of Montana. He developed and wrote the wilderness sections. He has been with the BLM ten years.

Gaylon Wilcox, Lands Issue Leader
Attended Mendocino Community College, Flathead Community College and Miles Community College with emphasis on business, real estate, physical science and forestry. He developed and wrote all of the lands sections. He was with the BLM eight years.

Joe Frazier, Hydrologist
BS Business Administration, University of Kansas, MS Aquatic Biology, Emporia State University, MS Hydrology, University of Wyoming. He prepared the hydrology portion of the RMP. He has been with the BLM six years.

Amy Fraley, Soil Conservationist
BS Resource Management, University of Wisconsin at Stevens Point. She wrote the soils portion of the RMP. She was with BLM six years.

Les Dobson, Hydrologist
BS Watershed Science, Colorado State University. He wrote the air quality portion of the RMP and assisted in applying the hydrologic unsuitability criteria to coal areas. He has been with BLM five years.

Hank McNeel, Agronomist
BS General Agriculture, Colorado State University, MS and work toward PhD Agronomy (Weed Science), University of Idaho. Hank wrote the agricultural sections of the RMP. He has been with BLM eight years.

B.J. Earle, Archaeologist
BA and graduate work Archaeology, Brigham Young University. She prepared the cultural resource and historical sections of the RMP. She has been with BLM for eleven years.

Mark Gorges, Wildlife Management Biologist
BS Biology, Manhattan College, BS and MS Fish & Wildlife Management, Montana State University. He wrote the wildlife sections of the RMP. He has been with BLM seven years.

Susan L. Davidson, Sociologist
BS Sociology, University of Wisconsin at Madison, MA Sociology, Colorado State University. She wrote

the social impact assessments of the RMP. She was with the BLM one year.

Dave Peters, Regional Economist
BA Economics/Business Administration, Chapman College. He wrote the economics sections of the RMP. He has been with BLM twelve years.

Harold C. Vosen, Range Management
BS Forest Management, University of Idaho. He worked on the vegetation inventory, computer analysis and allotment categorization. He has been with BLM 24 years.

Dale Hanson, Range Convervationist
BS Wildlife Science, New Mexico State University. He wrote the paleontologic portions of the RMP. He worked on the vegetation inventory and allotment categorization. He has been with BLM nine years.

William Schurger, Realty Specialist
BS Forestry, University of Montana. He wrote the forestry portion of the RMP. He has been with BLM seven years.

Vern Taylor, Supervisory Range Conservationist
BA Animal Husbandry, MA in Range Management and Animal Nutrition, Montana State University. He prepared the range management portion of the RMP. Vern has been with the BLM for 24 years.

Paul Cepulis, Geologist
BS Geology, Utah State University. He prepared the maps for mineral portions of the RMP. He was with BLM three years.

Kenneth Hanify, Natural Resource Specialist
BS Science and Industrial Arts, South Dakota State University, and MA Biology, Northern Arizona University. He wrote the section on recreation in the RMP. He has been with BLM eight years.

Gordon Cormier, Geologist
BS Geology and Range, Montana State University. He worked on the oil and gas and locatable minerals portions of the RMP. He was with BLM for eight years.

James Hetzer, Writer/Editor
BA Journalism, University of Colorado. He wrote portions, edited and assisted with layout of the RMP. He has been with the BLM seven years.

Rebecca A. Holzheimer, Cartographic Technician
Graduated from Simms (MT) High School. She prepared the allotment overlay for the RMP. She has been with BLM seven years.

Kathy Bockness, Lead Clerk-Typist
Graduated from Sacred Heart High School, attended Miles Community College. She was responsible for the copy word processing and coding of the RMP. She has been with BLM five years.

Gloria Gunther, Clerk-Typist
Graduated from Custer County High School. She helped prepare word processing and coded copy for the RMP. She has been with BLM six years.

Barbara Hamburg, Clerk Typist
Graduated from Savage (MT) High School and Modern Business College, Missoula, Montana. Helped prepare word processing for the RMP. She has been with BLM for four years.

PUBLIC PARTICIPATION AND CONSULTATION

Preparation of the Draft RMP

Public participation and consultation during the preparation of the draft RMP began in 1980 with public scoping meetings held in Miles City, Hysham, Birney, Sheridan, Wyoming, Broadus and Ekalaka. There was also an interagency coordination meeting held in Miles City. Coordination and consultation meetings were also held with the Northern Cheyenne and Crow Indian tribes. In all, three informational and input gathering brochures were mailed while the RMP was in development.

Consultation with the U.S. Fish and Wildlife Service (USFWS) under Section 7 of the Endangered Species Act, as amended, was initiated as part of the Powder River Resource Management Plan. A biological assessment was prepared by the Powder River Resource Area of the BLM. On April 17, 1984, the USFWS concurred with a "no affect" determination (See letter No. 4).

Area newspapers and the Federal Register were also used as means to keep the public informed of the RMP development. One step in the process was consultation by letter with all of the approximately 450 surface owners over areas of federal coal with development potential in the Resource Area, one of four planning screens applied to this public resource.

Public participation included requests for public input in the formulation of issues, criteria, initial alternatives and adoption of preferred alternatives. Mailings included addresses of those known to have been interested in the Powder River Resource Area previously as well as a mass mailing to over 4,000 mail box holders in the Resource Area.

During the Development of the Final RMP

The draft RMP was filed with the Environmental Protection Agency on February 24, 1984. The notice of availability and a public hearing announcement were published on February 16, 1984 in the Federal Register. This notice announced a 90 day comment period commencing on March 9 and ending on June 7, 1984.

Over 2,000 copies of the draft were mailed to Federal, state and local governments, private groups and organizations and individuals for review and comment. News releases provided information on how to obtain copies of the draft. Formal public hearings were held during 1984 in Ekalaka, April 10; Broadus, April 11; Miles City, April 12; Sheridan, April 17; and Colstrip, April 18. A BLM official presided over each hearing and two BLM representatives served on the panel. A court reporter recorded the hearings verbatim. A total of 33 comment letters and oral statements were received during the 90 day comment period. Responses to these comment letters and the public hearings are provided in this chapter.

An Interagency meeting was held March 20 to coordinate and consult with representatives from the Montana Department of Fish, Wildlife and Parks, Department of State Lands, and the U. S. Soil Conservation Service. Also

in attendance were representatives from the National Wildlife Federation.

Official consultation with the Governor of Montana was accomplished following the public comment period. After a review of the public comments and the Draft RMP, the Governor provided comments from the State of Montana.

Agencies and Organizations Consulted

The Powder River RMP/EIS team consulted and/or received comments from the following organizations and agencies during the preparation of the document:

American Mining Congress
Audubon Society
Montana Association of State Grazing Districts
National Association of Counties
Montana Association of Conservation Districts
League of Women Voters
Roosevelt Custer R C & D
Northern Plains Resource Council
Montana Coal Council
Natural Resources Defense Council
Powder River Basin Resource Council
*Montana Public Lands Council
Sheridan County Chamber of Commerce
Sierra Club
Wilderness Society
National Wildlife Federation
*Wildlife Management Institute
Wildlife Society
*Meridian Land & Mineral Company
*Exxon Oil Company
*Atlantic Richfield Company

Local, State and National Government Elected Officials

U.S. Senator Max Baucus
Mayor, Town of Broadus
Mayor, Town of Ekalaka
Mayor, City of Forsyth
Mayor, Town of Hysham
Congressman Ron Marlenee
U.S. Senator John Melcher
Mayor, City of Miles City
Montana Representative Carl Zabrocki
Montana Representative Tom Asay
Congressman Pat Williams

Federal Agencies

Buffalo (Wyoming) Resource Area, Bureau of Land Management
Bureau of Indian Affairs
U.S. Air Force Civil Engineering
Bureau of Reclamation
Soil Conservation Service
Agricultural Stabilization & Conservation Service
*U.S. Army Corps of Engineers
*Environmental Protection Agency
Custer National Forest
*U.S. Fish & Wildlife Service
U.S. Geological Survey
U.S. Geological Survey — Water Resources Division
*Office of Surface Mining Reclamation and Enforcement
Indian Health Service
*U.S. Department of Transportation, Federal Highway Commission
Federal Highway Commission
Federal Energy Regulatory Commission
*Department of the Interior — National Park Service
*Department of Transportation — Federal Aviation Administration

*Comments Received on Wilderness or from Governmental Agency

State and Local Government

Commissioners, Conservation Districts, Planning Boards:
Big Horn County
Carter County
Custer County
Powder River County
Rosebud County
Treasure County
Sheridan County (Wyoming)
Custer County ASC Committee
Great Falls City — County Planning Board
Montana, State of
*Office of the Governor
Water Quality Bureau
Environmental Quality Bureau
Department of Agriculture
Department of Commerce
Department of Fish, Wildlife & Parks
Department of Health & Environmental Sciences
Bureau of Mines & Geology
*Office of Historic Preservation
Department of State Lands
Department of Natural Resources
Powder River County Agent
Rosebud and Treasure Counties Agent

Indian Tribes

Crow Tribal Chairman Donald Stewart
Crow Tribe Division of Natural Resources
Crow Tribe Land & Resources Committee
Northern Cheyenne Tribal President Allan Rowland
Northern Cheyenne Tribal Environmental Affairs
Northern Cheyenne Tribal Planning Office

Subsequently, letters soliciting wilderness specific comments were sent to both the Crow Tribal Council and the Northern Cheyenne Tribal Council. No response has been received.

Individuals

Individual livestock grazing operators, area schools, libraries and many individuals were contacted for views on the Powder River planning and resources.

COMMENTS AND RESPONSES

A total of 33 individuals, private organizations and federal and state agencies submitted comments on the recommendations and analysis contained in the Powder River Draft

RMP/EIS. Twenty eight were written comments and five were oral statements obtained during the hearings. One oral statement and one written comment letter were by the same individual. Of these contributors 11 were directed towards wilderness. See Table 5-1 for the list of commentors followed by the actual comments. All federal agency comments and others who commented on the wilderness issue are included.

TABLE 5-1
List of Written and Oral Comments

FEDERAL AGENCIES

1. Advisory Council on Historic Preservation, Golden, CO
2. Department of the Army—Omaha District Corps of Engineers, Omaha, NE
3. Department of Transportation—Federal Highway Administration, Helena, MT
4. Department of Interior—Fish and Wildlife Service—Endangered Species Field Office, Helena, MT
5. Department of Interior—Office of Surface Mining, Denver, CO
6. Department of Interior—National Park Service, Denver, CO
7. United States Environmental Protection Agency, Denver, CO
8. Department of Transportation — Federal Aviation Administration, Helena, Montana

STATE AGENCIES

9. State of Montana, Office of the Governor, Helena, MT

ORGANIZATIONS

10. Meridian Land and Mineral Co., Billings, MT
11. Wildlife Management Institute, Washington, DC
12. Exxon Oil Company, Denver, CO
13. Atlantic Richfield Company, Denver, CO
14. Montana Public Lands Council, Helena, MT

INDIVIDUALS

15. Marie Root, Missoula, MT
16. Edward M. Dobson, Sarpy Creek, MT

ORAL COMMENTS

17. Walter Archer, Olive, MT
18. Mark W. Dodd, Colstrip, MT

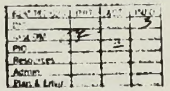
1

Advisory Council On Historic Preservation

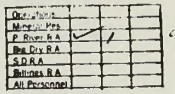
1522 K Street, NW
Washington, DC 20005

Reply to:

730 Simms Street, Room 450
Golden, Colorado 80401



MAR 26 1984



March 22, 1984

Mr. Michael J. Penfold
State Director
Bureau of Land Management
Miles City District Office
P.O. Box 940
Miles City, MT 59301

Dear Mr. Penfold:

The Council received the Draft Environmental Impact Statement for the Powder River Resource Area: Resource Management Plan, Miles City District on March 15, 1984. We understand that the document is general in nature and provides only a "generic" description of the impacts of each of the options. Nevertheless, it is difficult to believe, that even at a generic level, the impacts of each of Alternatives A, B, and C, are the same. Yet the discussion of impacts on Cultural Resources of each of those alternatives is identical (except for the differing number of sites listed on page 174, which is apparently a typographic error). It seems likely that careful consideration would reveal differing degrees of impact in each alternative, if the alternatives are indeed different.

In addition, we note that there is no mention of the Programmatic Memorandum of Agreement on the Federal Coal Management Program, which governs the treatment of historic properties on Federal Coal lands. This document should be cited in the DEIS.

If you have any questions or if the Council can be of assistance, please contact Alan Downer at (303) 234-4946, an FTS number

Sincerely,

Robert Fink
Acting Chief, Western Division
of Project Review

1. Thank you for your letter.

DEPARTMENT OF THE ARMY
OMAHA DISTRICT CORPS OF ENGINEERS
6014 U.S. POST OFFICE AND COURTHOUSE
OMAHA, NEBRASKA 68102

REPLY TO ATTENTION OF

April 12, 1984

Planning Division

2

Mr. Jay Guerin
Bureau of Land Management
Miles City District
P.O. Box 940
Miles City, Montana 59301

Dear Mr. Guerin:

We have reviewed the Powder River Resource Area Resource Management Plan and draft EIS. For now, our only comment relates to the Corps' permit authority under Section 404 of the Clean Water Act.

The document appears to lack any statements regarding possible permit authorizations that would be required pursuant to Section 404 of the Clean Water Act. It is inevitable that plans involving coal development will result in the placement of fill material in a waterway or wetland. Therefore, we request the following statements be included in your final document.

a. Section 404 of the Clean Water Act regulates the discharge of dredged or fill material in the Nation's waterways, lakes and wetlands. Such activities must be authorized under a Nationwide permit or permitted by an individual Department of the Army permit.

b. Individual or Nationwide permits will be required for filling activities associated with wetlands. These actions would be evaluated on a case-by-case basis.

c. Filling activities on waterways having an average annual flow of less than 5 cubic feet per second (c.f.s.) will generally be considered under the Nationwide permit concept.

d. Individual permits will be required for filling activities on waterways where the average annual flow is greater than 5 c.f.s.

Thank you for this opportunity to comment on your agency's plans.

Sincerely,

Gerard E. Mick
Acting Chief, Environmental
Analysis Branch
Planning Division

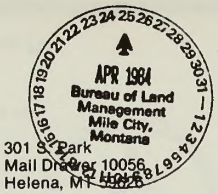
2. Thank you for your letter.

U.S. Department of Transportation
Federal Highway Administration

Region Eight

MONTANA DIVISION

301 S. Park
Mail Drawer 10056
Helena, MT 59626



3

April 24, 1984

HPD-MT

Jay Guerin, Project Manager
Miles City District Office
Bureau of Land Management
P. O. Box 940
Miles City, Montana 59301

Dear Mr. Guerin:

We have reviewed the draft environmental impact statement for the Powder River Resource area.

The document does not address transportation impacts associated with increased traffic and loads which would result if suitable coal leases are developed. The cost of upgrading roads to accommodate increased traffic will cause a considerable drain on both state highway funds and the highway trust fund. Significant increases in coal train traffic also increases the potential for rail-automobile accidents and increases automobile delays at grade crossings. Such delays can be eliminated by rail-highway separation structures but they are costly.

Sincerely yours,

W. S. Dunbar
Project Development Engineer

3. Thank you for your letter.

4

OPTIONAL FORM NO. 10
JULY 1973 EDITION
GSA FPMR (41 CFR) 101-11.6

UNITED STATES GOVERNMENT

Memorandum

M.02.83.124

TO : Area Manager, Bureau of Land Management
Powder River Resource Area, Miles City, MT

DATE: April 17, 1984

FROM : Field Supervisor, Endangered Species Field Office, USFWS
Federal Building, 301 South Park, P.O. Box 10023, Helena, MT

SUBJECT: Biological Assessment for the Powder River Resource Management Area

We have reviewed the subject assessment and the draft environmental impact statement as a reference document. Based upon the information contained in these documents, our files, and through discussions with your staff, we concur with your "no affect" determination on listed endangered species which may occur in the resource area covered by this plan.

Our concurrence is contingent upon your stated commitment to conduct the appropriate surveys for endangered, threatened, or proposed species which are currently listed or those listed in the future under the Endangered Species Act, as amended, on a case-by-case basis for individual actions under the coal, vegetation utilization or land issues covered by this resource management plan.

Wayne L Brewster

5010-110

Buy U.S. Savings Bonds Regularly on the Payroll Savings Plan

4. Thank you for your letter.

United States Department of the Interior
OFFICE OF SURFACE MINING
Reclamation and Enforcement
BROOKS TOWERS
1020 15TH STREET
DENVER, COLORADO 80202

MAY 17 1984

MAY 1984
Bureau of Land Management
Miles City, Montana

5

MEMORANDUM

TO: Jay Guerin, Project Manager, Miles City District, Montana, Bureau of Land Management

FROM: Mc[illegible], Chief, Mining Analysis Division, Western Technical Center, Office of Surface Mining Reclamation and Enforcement (OSM)

SUBJECT: Powder River Resource Area Resource Management Plan (RMP)/Environmental Impact Statement (EIS)

We have reviewed the draft EIS for the Powder River Resource Area RMP and are submitting comments and suggestions (attached) for your consideration. We appreciate this opportunity to participate in the review of the document and look forward to seeing the final EIS.

If you have any questions concerning these comments or any other matter relating to this EIS, please feel free to contact Floyd McMullen at (303) 844-5421.

Attachment

POWDER RIVER RESOURCE AREA RMP: OSM REVIEW OF THE DRAFT EIS

1. The discussion of the mining companies' required compliance with existing regulations (p. 45, para. 8) incorrectly cites the Council on Environmental Quality regulations as 40 CFR 211. The correct reference is 40 CFR 1500-1508.

2. The summary of cumulative impacts for the coal issue (table 2-24, following p. 47) and the discussions of soils impacts in chapter 4 (p. 111, para. 14; p. 129, para. 4; p. 155, para. 2; p. 170, para. 15; and p. 185, para. 13) describe Class VII and VIII lands as of "questionable successful reclamation potential." However, the discussion of resources in chapter 3 (table 3-14, p. 72) describes Class IV and VI lands as of "questionable reclamation" potential and Class VII and VIII lands as "not suitable for reclamation." Standardizing your descriptions of reclamation potential criteria for these classes of land would reduce confusion.

3. The reader's understanding of the total coal resource (recoverable and non-recoverable coal) in the resource area would increase if the chapter 3 discussion of coal resources (p. 51-57) addressed the recoverable coal resource in terms of percentage recovery; mining depths of the various coal beds; minimum thicknesses of the minable coal beds; lateral extent of the coal beds; and recovery versus mining methods.

4. It seems that the designations for "range sites" first delineated on map 3-5 (p. 65) and described on page 66 do not track throughout the remainder of the EIS. (See the "range-site" display in figure 3-4 (p. 73) and the "range-site" evaluation in appendix K.) If a designation for a given range site (i.e., "Silty Range Site No. 27," p. 66) pertains throughout the report, please retain this designation uniformly (i.e., do not call the same site "Silty Range Site No. 3," p. 264). If the designation does not pertain throughout, please consider renaming the site in question something other than a "range site."

5. The chapter 3 discussion of land capability classes and their connection with reclamation potential (p. 72-74) would be more informative if it tied the capability classes to the range sites delineated on map 3-5 (p. 65).

6. Please consider expanding the chapter 3 discussion of the reclamation potential of soils (p. 72, para. 4-10) to address chemical and physical properties of the overburden; chemical and physical properties of the interburden; potential toxicities of topsoil, overburden, and interburden; and potential substitution of overburden/interburden for the Class IV, VI, VII, and VIII soils of questionable or unsuitable reclamation potential. Data for this expanded discussion should be available from the mine plans for the mines listed in table 3-2 (p. 55).

7. The chapter 3 discussion of wildlife habitat (p. 74, para. 2-7) appears to be restricted to general vegetation-oriented habitat types. We suggest the discussion be expanded to briefly recognize the presence of, and values provided by, abiotic habitat (i.e., rock outcrops, clifflike features, diverse topography, springs, and stock ponds).

8. The chapter 3 discussion on bald eagles (p. 75, para. 4) should be clarified (1) to acknowledge the presence of nests in the area today and (2) then to discuss the potential reoccupation of additional historic habitat.

9. Chapter 3 names several migratory birds of high Federal interest that have been identified in the region (p. 76, para. 2). We suggest that the discussion for unsuitability criterion 14 in appendix D (p. 218) be expanded to show rationale for not including areas used by these species.

10. We find no mention of the several species of reptiles and amphibians known to inhabit the area in either the chapter 3 or chapter 4 wildlife discussions (p. 74-77, 112-114, etc.). Given the right conditions, cumulative impacts to these species from the numerous proposed developments are potentially significant. Therefore, both the species and impacts to them should be discussed.

11. The chapter 3 discussion on air quality (p. 88, para. 1) references sulfite (SO_3) concentrations for Units 3 and 4 of the Colstrip powerplant, rather then the sulfate (SO_2) concentrations discussed in the remainder of the document.

12. The chapter 3 discussion (p. 89, para. 7, to p. 91, para. 1) of the relationship between "prime farmland," the "127 soils" that could be prime farmland if they were irrigated, and the "195 soils that are of statewide importance" is confusing in several respects. What are the acreage figures for these three designated areas? Do the acreages for the areas overlap? Do the areas contain some of the same soils? If so, which soils, or, more to the point, what percentage of soils overlap? Clarification of these points would be helpful.

13. Montana State regulations require surface-coal-mine permittees to replace any surface-water supply for domestic, agricultural, industrial, or any other legitimate use if such a supply is diminished, interrupted, or contaminated, to the extent of precluding use of the water, as a result of mining. Citation of this regulation would give context to, and so clarify, the discussion of surface-water-quantity impacts from coal development under all alternatives (p. 109, para. 6; p. 126, para. 11; p. 152, para. 9; p. 168, para. 6; p. 183, para. 9).

14. The conclusion that "the net long-term effect of mining on surface-water quantity would be insignificant" under each alternative (p. 109, para. 6; p. 126, para. 11; p. 152, para. 9; p. 168, para. 6; p. 183, para. 9) should be supported. Tables 4-1, 4-5, 4-17, 4-18, and 4-19 indicate that water quantity (initial minus long-term yield) could be reduced from as much as 1,100 acre-feet under the resource-protection alternative to as much as 30,300 acre-feet under the resource-production alternative. These considerable quantity reduction figures appear to contradict your conclusion of "insignificant" effect, especially on a local and possibly on a regional basis.

15. The discussion on ground-water-quantity impacts from coal development under all alternatives (p. 109, para. 10; p. 127, para. 3; p. 153, para. 3; p. 169, para. 1; p. 184, para. 1) would be further clarified by your referencing State regulations. (See comment "13," above.)

16. The tabular "summary of watershed impacts" for each alternative (table 4-1, p. 110; table 4-5, p. 127; table 4-17, p. 153; table 4-18, p. 169; table 4-19, p. 184) would be less confusing if the "+" were designated "improvement," rather than "increase," and the "-" were designated "degradation," rather than "decrease."

17. The impact discussion concerning reconstruction of the soil profile for all alternatives (p. 111, para. 15; p. 129, para. 5; p. 155, para. 3; p. 171, para. 2; p. 185, para. 14) should be expanded to mention the importance of overburden analysis and the benefits of potential substitution of better quality overburden/interburden for the Class IV, VI, VII, and VIII soils of questionable or unsuitable reclamation potential. The discussion would be clarified if you added a reference to the State regulation that allows no sodic, toxic-forming, or acid-forming material to be placed within the root zone.

18. The conclusion that "with proper mitigation, there would be no impacts to the soils resource after reclamation" under each alternative (p. 112, para. 2; p. 129, para. 6; p. 155, para. 4; p. 171, para. 3; p. 185, para. 14) should be supported. Our soil specialists have evaluated the information you furnish on soils in the EIS and have concluded that that impact of creating a new, more uniform, postmining soil with new texture, structure, color, accumulation of clays, organic matter, and chemical composition could be major, especially over the short term. Please consider modifying either your conclusion or the information upon which it is based.

19. Wildlife impact discussion under each alternative (p. 112-115, 130-131, 156-158, 172-174, 186-188) do not mention any secondary impact to wildlife resulting from coal development. For example, it may be useful to point out that population increases require additional offsite construction of housing and service facilities and that, in turn, these developments further reduce available wildlife habitat acreages.

20. Chapter 4 discussions on known threatened- and endangered-species use areas (p. 113, para. 8; p. 130, para. 8; p. 156, para. 10; p. 172, para. 9; p. 186, para. 16) should clarify to what extent you consulted the U.S. Fish and Wildlife Service, under Section 7, in making your determination.

21. Chapter 4 air-quality sections (p. 118, 134, 161, 176, and 190) appear to summarize results found by Radian Corporation and presented in its "Powder River Basin Regional EIS Climate and Air-Quality Report." If this is the case, please cite Radian Corporation as a source and reference summarized information accordingly.

22. Air-dispersion and visibility modeling references in the air-quality impact discussions (p. 118, 134, 161, 176, and 190) would be much clearer if supporting isopleth maps were included. TSP and SO_2 discussions should include ambient air-quality data.

23. Chapter 4 air-quality impact discussions (p. 118, 134, 161, 176, and 190) describe TSP concentrations in terms of milligrams per cubic meter (mg/m^3); the chapter 3 discussion (p. 88, para. 1) describes TSP in terms of micrograms per cubic meter (ug/m^3). Please standardize these units of measurement.

24. Chapter 4 discussions on air quality (p. 118, 134, 161, 176, and 190) do not clearly identify the averaging time being referenced in the analysis. You address potential impacts and their magnitude, but do not compare these impacts to a 3-hour, 24-hour, and annual standard for SO_2 and to a 24-hour and annual standard for particulates.

25. Your contention that increased vegetative production would have a percentage positive effect on reducing fugitive dust generation from wind erosion (p. 118, para. 3; p. 161, para. 3; p. 177, para. 4; p. 190, para. 4) should be better supported. The figures appear to have little relevance to the discussion and may be difficult to verify.

5. Thank you for your letter.

United States Department of the Interior
NATIONAL PARK SERVICE
ROCKY MOUNTAIN REGIONAL OFFICE
655 Parfet Street
P.O. Box 25287
Denver, Colorado 80225

IN REPLY REFER TO:
L7619 (RMR-PC)

JUN 6 1984

6

Memorandum

To: Project Manager, Miles City District Office, Bureau of Land Management, Miles City, Montana

From: Associate Regional Director, Planning and Resource Preservation, Rocky Mountain Region

Subject: Review of draft Resource Management Plan/Environmental Impact Statement for the Powder River Resource Area, Big Horn, Carter, Custer, Powder River, Rosebud, and Treasure Counties, Montana (DES 84/4)

The National Park Service has reviewed the subject document and has the following comments.

The Powder River Resource Area contains a designated National Natural Landmark, Capitol Rock, located in eastern Carter County. National Natural Landmarks are so designated because of nationally significant ecological or geological features. We recommend that the Bureau of Land Management include this landmark in its discussion of "Management Guidance Common to All Alternatives," beginning on page 7 of the subject document. Implementation of the selected alternative should preclude adverse impacts to this area in order to preserve the qualities for which it was designated as a National Natural Landmark.

Further information on this landmark can be obtained from Ms. Carole Madison, National Park Service, Rocky Mountain Region, Division of Recreation Grants and Review, P.O. Box 25287, Denver Federal Center, Denver, Colorado 80225-0287 (Phone: 234-6443).

Richard A. Strait

6. Thank you for your letter.

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
Ecological Services
Federal Building, Room 3035
316 North 26th Street
Billings, Montana 59101-1396

IN REPLY REFER TO:
ES

June 7, 1984

7

MEMORANDUM

TO: Jay Guerin, Project Manager, Bureau of Land Management, Miles City District Office, Miles City, MT

FROM: Field Supervisor, USFWS, Billings, MT (ES)

SUBJECT: Review of Draft Resource Management Plan/Environmental Impact Statement (RMP/EIS) for the Powder River Resource Area

We have reviewed the subject statement and the following constitute the comments of the U.S. Fish and Wildlife Service (FWS).

Endangered Species

Section 7 Consultation has been completed and the results forwarded to your office under separate cover by the Endangered Species Field Supervisor in Helena.

Range Resources

Under the preferred alternative, it is proposed to upgrade 160,024 acres of selected public rangeland to "good" condition, through use of more intensive grazing management and range improvements. Mechanical treatments would include scalping, chiseling, contour furrowing, pitting, ripping, interseeding and chaining; these would be used on 125,023 acres. As stated on page 61 of the RMP, rangeland in the area is predominately a needlegrass, wheatgrass and blue grama association.

In the past, we have been concerned with an apparent trend toward development of crested wheatgrass pastures in lieu of the native wheatgrass species. This type of conversion results in monotypic vegetation, essentially useless to wildlife. Even if other species such as alfalfa or sweetclover are included in the mixture, they are generally eliminated, over time, due to the competitive nature of crested wheatgrass and the high livestock utilization rates typically used to maintain the "pasture" in palatable condition. Although the RMP is not specific with regard to this question, we wish to indicate that we believe such range conversion (to crested wheatgrass) should not be undertaken on public lands that are managed for multiple use. If undertaken at all, they should be developed on the private lands included in an RMP in order to defer use on the native public range until mid-June or early July. Thus, the livestock operator would still have the necessary spring grazing and the native public range would be maintained. We feel this is especially important now because of the negative wildlife impacts resulting from loss of native range in Montana due to "plow-outs" in recent years. We therefore recommend that only native grasses and forbs be used for any seeding on public lands.

We are also very concerned over land treatments using herbicides, especially Tordon 2k pellets, because of potential long-term effects to woody vegetation. According to our information, residues can affect susceptible land species four or five years after application when applied at 2 or 3 lb/acre in certain situations, especially in cold and/or dry soils.

We note on page 26 of the RMP that "prior to the approval of all proposed range improvement projects, an interdisciplinary insoection would be done to evaluate the feasibility and impacts of the proposed developments. Recommendations and mitigation are discussed in the field to overcome problems ..." The discussion goes on to list what mitigating measures may include. We find it difficult to address the adequacy of mitigation when displayed in such general terms. We believe attention should be given to "spelling out" the specific mitigation measures to be used for resource protection, in relation to specific project developments, during preparation of the Final RMP/EIS. Describing the coordination approach is, however, also useful.

Wildlife Unsuitability Criteria

We have reviewed the application of unsuitability criteria on the federal mineral estate within the Powder River Resource Area. We support your determination to require completed wildlife inventories as a prerequisite to completion of wildlife unsuitability applications on all coal lands considered acceptable pending further study.

We have found, during past leasing efforts in the Powder River and Fort Union Coal Regions, that completion of four-six season wildlife inventories and application of unsuitability criteria well in advance of coal leasing activities minimizes the conflict between wildlife and coal development initiatives. We recommend that the schedule for completing necessary wildlife invertories for the 862,500 acres of unleased coal that would be available for further consideration under the preferred alternatives be included in this planning document.

Land Tenure

On the issue of land tenure adjustments, we would like to request that you implement a goal of utilizing exchanges wherever possible instead of disposal through sales. The outright sale of public lands could have severe consequences upon the wildlife values of the lands and the public's use thereof. Furthermore, we encourage you to pursue, on a priority basis, providing access to public lands where such access does not now exist, except in those areas important to the recovery of endangered or threatened species.

Livestock Grazing

On the issue of grazing, we found almost no details in the draft on how grazing will be managed to benefit wildlife. The inference appears to be made that bettering the range conditions will also benefit wildlife. Although we believe wildlife can also benefit from bettering range conditions, we feel that other issues must also be considered to determine whether wildlife resources will receive any potential benefits. Often times, range improvements (water development, fencing, grazing systems) associated with intensive management have substantial negative impacts. For example, one ramification of intensive management is the intrusion of livestock into areas that previously were not heavily utilized because of a lack of stock water. After water developments are installed, livestock/wildlife competition may be spread over a broader area than was previously possible. Another impact is the often intensive utilization of forage in one or more of the pastures in a grazing system which leaves little or no residual cover for wildlife in these particular pastures. We feel these, as well as other pertinent issues, must be discussed in the final EIS before the assertion can reasonably be made that the proposed grazing management will benefit wildlife. As written, the draft does not discuss these negative implications of intensive management. We believe more attention should be given to addressing the impacts of grazing management upon wildlife.

Riparian Habitat

We were pleased to see the special emphasis given to riparian habitat in the draft. However, we feel that more needs to be done, in a timely manner, to preserve this extremely valuable habitat. As you know, the BLM, at the national level, has recognized the importance of riparian-wetland habitat, and special emphasis has been given to the protection and enhancement of these areas, in terms of general policy. On February 5, 1980, the BLM published in the Federal Register (Volume 45, No. 25, pages 7889-7895), Final Guidelines; Wetlands-Riparian Area Protection and Management; Policy and Protection Procedures. Therein it is stated that, "Riparian areas which presently or potentially support broad-leaf vegetation in arid and semi-arid ecosystems are of special management concern" (emphasis added). One of the stated objectives is to, "implement a management system to protect, maintain, and enhance all

wetland-riparian areas administered by BLM" (emphasis added). The guidelines further state that BLM policy will be to, "Avoid the long and short-term adverse impacts associated with the destruction, loss, or degradation of wetland-riparian areas"... and, "Preserve and enhance the natural and beneficial values of wetland-riparian areas which may include constraining or excluding those uses that cause significant, long-term ecological damage."

Having reviewed the Powder River RMP, we were unable to determine if these guidelines are being adequately observed. We recommend that during the preparation of the Final EIS, more attention be given to wetland-riparian habitat protection needs. We support your goal of maintaining woody reproduction in riparian areas to provide 30% of the woody species as saplings or younger trees to assure continued age class diversity in the system (p. 25). We do not see any discussion of the existing condition of riparian areas, location of areas where improvement is needed, or what protection or improvement measures will be used to reach the desired goals. We fully support your goals of maintaining woody reproduction in riparian areas and we cannot overemphasize the importance of specifying how, where, and when you intend to reach these goals.

We are especially interested in the 5,000 acres with potential to support woody riparian vegetation and the special management considerations to promote reproduction. Please provide more detailed information on how, where, and when this will be accomplished. In addition, we believe the existing status of riparian habitat should be described in the Final EIS (e.g., acres of riparian habitat and its condition).

Wilderness

Because of the importance of Zook Creek USA and Buffalo Creek USA to wildlife, we suggest that you very seriously consider recommending these areas to Congress as suitable for wilderness. Some of the impacts to wildlife are eliminated or dampened when the provisions for wilderness management are in place, and due to the potential for resource extraction in these areas, wilderness designation may well be the best option available to insure long-term protection of these areas and their associated wildlife.

John G. Wood

John G. Wood

cc: State Director, BLM, Billings, MT
USFWS, Office of Environmental Coordination, Washington, D.C.
Regional Environmental Officer, Department of the Interior, Office of the Secretary, Denver, CO
Regional Director, USFWS, Denver, CO (HR)
Director, Montana Department of Fish, Wildlife, and Parks, Helena, MT
Field Supervisor, USFWS, Helena, MT (SE)

7. All alternatives provide for mitigation and protection of wildlife values at Buffalo Creek and Zook Creek, whether or not they are designated wil derness.

U.S. Department of Transportation
Federal Aviation Administration

Airports District Office
FAA Building, Room 2
Helena Regional Airport
Helena, Montana 59601

8

August 14, 1986

Mr. Rob McWhorter
Acting District Manager
U.S. Dept. of the Interior
Bureau of Land Management
Miles City District Office
P. O. Box 940
Miles City, Montana 59301

Re: Missouri Breaks Wilderness Suitability Study DES; Billings Resource Management Plan FEIS; Powder River Resource Management Plan FEIS.

Dear Mr. McWhorter:

We have reviewed the referenced documents and determined the proposed actions will have no adverse effects on any existing or planned aeronautical facilities. We therefore have no comments and are returning the documents as requested.

We appreciate the opportunity to comment.

Sincerely

Susan S. Alexander
Planning/Program Officer

50 Years of Air Traffic Control Excellence – A Standard for the World –

8. Thank you for your letter. (This letter was solicited and received after the public comment period for the PR-RMP).

9

DEPT. OF INTERIOR
BUR. OF LAND MANAGEMENT
1984 JUN 21 PM 2 10
BILLINGS, MT

State of Montana
Office of the Governor
Helena, Montana 59620

TED SCHWINDEN
GOVERNOR

June 20, 1984

Mr. Edwin Zaidlicz, State Director
Bureau of Land Management
P.O. Box 36800
Billings, MT 59107

Dear Mr. Zaidlicz:

The State of Montana has reviewed the Powder River Resource Area Resource Management Plan (RMP) draft Environmental Impact Statement. The RMP is well written, easy to read, and gives the reader a good background from which to evaluate the plans presented. Your agency's selection of the Preferred Alternative, with its emphasis on a balanced approach to mineral, range, and wildlife management, is appropriate.

We appreciate the opportunity to review the RMP and submit comments. The Miles City Bureau of Land Management staff has been most helpful in providing additional information. You will find specific comments attached regarding the RMP.

The State of Montana looks forward to its continued involvement in important future coal related decisions within the Powder River Resource Area through active participation in the Powder River Regional Coal Team. Thank you for the opportunity to submit comments.

Sincerely,

Ted Schwinden

TED SCHWINDEN
Governor

Attachments

State of Montana
Office of the Governor
Helena, Montana 59620

TED SCHWINDEN
GOVERNOR

COMMENTS
POWDER RIVER RESOURCE AREA
RESOURCE MANAGEMENT PLAN
DRAFT EIS

1. The emphasis on intensive management as a range improvement tool is appropriate. The application of intensive grazing techniques, such as the Savory Grazing Method and others, may allow for further Animal Unit Month (AUM) increases. The planning process should be flexible enough to accommodate this if the opportunity arises.

2. More specific information on the areas where mechanical range improvements may be used would be helpful. While we endorse efforts to improve range condition cost effective mechanical treatments should be carefully planned and implemented to reduce runoff, conserve the soil, increase forage production and preserve wildlife habitat. The long-term costs and benefits of mechanical treatments versus intensive grazing management should be discussed.

3. Treated areas should be reseeded quickly with adaptable species to reduce erosion and prevent weed invasion. Mitigating measures identified in the DEIS should help protect resource values on improvement projects.

4. The control of noxious weeds on rangeland is increasingly important. Coordination of weed control with private and state land managers, as well as with local weed boards and conservation districts is essential. The effects of intensive grazing management on weed populations should be carefully monitored. Such management may be a cost-effective deterrent to noxious weeds.

5. Wildlife values have been given their proper consideration through the approach taken in applying Unsuitability Criterion #15 to important wildlife areas. We are appreciative of the cooperation demonstrated with the Department of Fish, Wildlife, and Parks in this effort.

6. The availability of a monitoring plan for the wildlife, range, and watershed programs, as mentioned on page 10, would be beneficial for future resource management. It would be appropriate to include the State of Montana in the development of the monitoring plan. The evaluation of consistency between BLM, State and local plans and programs is appreciated.

7. The RMP draft Environmental Impact Statement (EIS) should provide an expanded discussion of potential transportation related impacts associated with possible future federal coal lease development. Please see the recent Draft EIS prepared by the Wyoming BLM Office for the Powder River Round II Federal Coal Lease Sale, as well as the State of Montana comments regarding transportation, for specific additional information.

8. The emphasis on exchange as a land adjustment tool is appreciated and consistent with previous public comment. Land exchange can provide increased public access opportunities for recreation, while maintaining or increasing AUM's on public lands.

9. Vehicular access should be restricted on areas with high erosion potential. The need for roads in the two wilderness study areas should be well-documented and carefully evaluated before approval.

9. Under the proposed statutory action, the areas are to be released from consideration for wilderness. However, no roads are planned or projected under the proposed action.

MERIDIAN LAND & MINERAL COMPANY

Norwest Center
Post Office Box 1779
Billings, MT 59103-1779
406 256-4500

10

June 5, 1984

Mr. Jay Guerin
Bureau of Land Management
P. O. Box 940
Miles City, Montana 59301

Dear Mr. Guerin:

Meridian Land & Mineral Company is pleased to have this opportunity to comment on the Draft Resource Management Plan/Environmental Impact Statement (RMP hereafter) for the Powder River Resource Area. Meridian finds the RMP is generally a very comprehenaive and well written document. The alternatives address the issues raised; the environmental consequences of each alternative are addressed; and the preferred alternative represents a fairly balanced choice. It appears that in most all cases, the fundamental requirements for an RMP have been met.

Meridian supports your preferred alternative even though in the case of coal the resource production alternative (Alternative C) would have been more advantsgeous for us and would have been our preferred alternative. Meridian supports the proposed land pattern adjustment goals and review criteria. We also agree with your rationale and recommendation that Zook Creek and Buffalo Creek Wilderness Study Areas are not suitable for wilderness designation.

16-1 One area of concern to Meridian is the fact that the RMP does not identify specific coal sreas acceptable for consideration for coal exchanges. As currently written, there is no indication where coal exchanges may occur except that they must meet the criteria specified in the Plan and in Appendix G. Meridian believes that it would not be practical to attempt to identify during planning all lands which may be conaidered for exchange because it is impossible to foresee all the circumstances which might benefit the public interest. In addition, we believe that an exchange which is identified subsequent to final publication of the RMP and which results in the same use of the resource as was identified in the RMP, must be considered an action in conformance with the RMP. For example, coal development achieved through either leasing or exchange results in the same use of the coal, and thus should not necessitate a plan amendment prior to approval of the exchange.

On the other hand, we believe that where the BLM can identify during planning lands which may be considered for exchange, then the BLM should identify those lands in the RMP. This early identification will serve to guide exchange proponents, help to eliminate frivolous proposals, and eliminate sny questiona as to whether there would be a need for an RMP amendment. When using this spproach, the RMP must also state that the lands specifically identified for exchange conaideration are not the only lands available for exchange and that proposals for other lands will be conaidered and reviewed using specified review criteria.

Applying the above concept to the instant case, it is clear that coal exchanges facilitate and meet the same goals as cosl leasing, and thus coal lands acceptable for further considerstion for leasing should also be identified acceptable for coal exchange. Making this designation in the RMP will assist exchange planning, will clear the majority of the federal coal lands for exchange and will eliminate later questions regarding the need for an RMP amendment. To implement this recommendation, Meridian suggests that the BLM amend the second paragraph on page 19 (and other portiona of the RMP as appropriate) as follows:

> "Coal exchanges would be considered for existing leases, by direction of legislation, or for leases located in alluvial valley floors. Exchanges would also be conaidered on a case-by-case basis, using three major criteria: equal vslue; conaolidation of federal mineral ownership; and serving the public interest. At a minimum, all federal coal available for further conaideration for leasing is available for conaideration for exchange. Coal exchanges may be considered in other areas, but regardless of their location, all coal exchanges must meet Bureau exchange policy criteria and the land pattern review criteria contained in this plsn and in Appendix G."

Turning to more specific comments, Meridian commends you for the discussion on pages 45 and 47. This discussion is essential to an understanding of the coal program and the coal portions of the Plsn and the EIS. This type of discussion has generally been omitted from other planning snd NEPA documents snd thus caused some misunderstandings.

And finally, we note that the BLM does not consider the federsl coal east of Armells Creek and north of Colstrip (Townships 2 and 3 North, Ranges 41 and 42 East) to be of high to moderate coal development potential. We would agree with the BLM's assessment under current market conditiona and for the next ten years. However, we would hope that the BLM will recognize in the future that this coal is of relatively high BTU value and lies closer to rail transportation than many other deposits snd thus should merit considerstion in future planning for leasing.

Meridian appreciates this opportunity to comment and hopes the BLM will give our recommendationa serious consideration.

Sincerely,

Marjie Taylor

M. J. Taylor
Regulatory Analyst

MJT/sd2927I

10. Thank you for your letter.

Wildlife Management Institute

Suite 725, 1101 14th Street, N.W., Washington, D.C. 20005 • 202/371-1808

DANIEL A. POOLE
President
L. R. JAHN
Vice-President
L. L. WILLIAMSON
Secretary
WESLEY M. DIXON, Jr.
Board Chairman

May 30, 1984

11

Jay Guerin, Project Manager
Miles City District
Bureau of Land Management
P.O. Box 940
Miles City, Montana 59301

Dear Mr. Guerin:

The Wildlife Management Institute is pleased to comment on POWDER RIVER RESOURCE AREA, RESOURCE MANAGEMENT PLAN, DRAFT ENVIRONMENTAL IMPACT STATEMENT, Montana.

We prefer Alternative D (Resource Protection) as the best long-term solution to soil, water, and vegetation protection and increases.

We prefer that all wilderness in the study areas receive wilderness classification. Almost all public lands are managed for multiple use; the few unroaded areas left should remain unroaded for future generations.

We are concerned about the large subsidy to the livestock industry by the proposed range improvement. The $6,465,960 cost of developments will increase livestock AUM by 25,304. Each AUM will cost $256. The grazing return is only $1.40 an AUM or $9.60 for a 6 months season. A return of this kind will be far less than the interest on the development cost.

There are 514 operators within the grazing district. The improvements will give an average subsidy of $12,579 to each of them. There is no listing of the allotments that will benefit from improvements, but we did calculate that the 72 "Activity Plans" will benefit $89,805 each. If all the 99 "improvement" allotments are the beneficiaries the average subsidy will be $65,312 each. Whatever is correct, the subsidy is large.

No grazing systems or locations of range improvements are specified. Mitigation for wildlife is inadequate. We were unable to find any monitoring program.

DEDICATED TO WILDLIFE SINCE 1911

Montana BLM has made land exchanges and sales that were beneficial to wildlife. If these practices continue, to benefit wildlife we would encourage the planned asset management. However, wetlands, riparian zones and crucial wildlife habitat are not included as one of the six types of land to be selected through exchange. (Page 27) That oversight should be corrected, and the new State Director should continue the policy of giving wildlife prominent consideration in exchanges.

Some specific comments follow:

Page 15 - Vegetation allocation. The public comment, favoring Alternative B, came mostly from people resident within the Resource Area. That should be emphasized.

Page 25, 3rd paragraph. The 50 small structures (such as ramps, tank fencing and bird boxes) are very minor commitments to wildlife improvement each year. Compare these with $6,465,960 scheduled for range improvements.

Page 28. It appears that coal potential was the primary reason for recommending no wilderness. How much coal must be available? Why not let the next generation make some of these decisions?

Page 74 - Wildlife. "Public Lands are a major source of Wildlife Habitat in Montana." This statement should be the basis for substantial wildlife emphasis in the final plan.

Page 75. Is BLM participating in the state's Black-footed ferret program?

Page 76 - Table 3-16. Wildlife is a major concern on one third of the allotments.

Page 95. If an AUM is worth $100 when a ranch is sold, how can BLM justify creating a new AUM for $256?

Page 113 - Mineral developments always increase poaching. This should be considered as an effect.

Page 187, Paragraph 5. Just because wildlife concerns will be addressed in 72 activity plans does not mean they will be minimal. That assumes a favorable decision, proper monitoring and sufficient budget and personnel.

These remarks have been coordinated with William B. Morse, the Institute's Western Representative.

Sincerely,

Daniel A. Poole
President

11. Although the coal resources beneath the WSA's are described, the potential for development is also presented to suggest there is little potential of mining. So the coal resources were not a significant factor in wilderness suitability determinations. Even though Buffalo Creek and Zook Creek meet the minimum criteria for wilderness, they are recommended unsuitable because there are no outstanding wilderness characteristics which would set them apart from adjacent non-wilderness areas.

12

Form 1541-3
(July 1965)
(formerly 4-1599 a)

UNITED STATES
DEPARTMENT OF THE INTERIOR
BUREAU OF LAND MANAGEMENT

CONFIRMATION/REPORT OF TELEPHONE CONVERSATION

TO	Name: Jay Guerin, Project Manager, PR RMP	FROM	Name: Fernando Blackgoat
	Office: Powder River Resource Area		Office: EXXON Oil Co.
	Location: Miles City, Montana		Location: Denver, Colorado
	Telephone Number: 406-232-4331		Telephone Number: 303-789-7488

Purpose of Call:

To submit comments on the Powder River Resource Management Plan. Mr. Blackgoat provided the following comments by telephone because his written comments, which are to be signed and forwarded by Division Manager H.W. Praetorius, could not be mailed before the end of the comment period.

Explanatory Remarks:

EXXON Company, USA, is pleased to have this opportunity to comment on the Powder River Area Resource Management Plan/Environment Impact Statement. EXXON has a strong interest in the planning process for federal public lands because many of these areas either produce coal, oil, or gas; or have definite potential for additional discoveries and production.

We find it encouraging that the Powder River RMP/EIS effort recognizes the presence of coal and hydrocarbon resources and, more importantly, the likelihood of their development. EXXON endorses the multiple use concept and especially your use of special stipulations only in areas of wildlife habitat or historic sensitivity. We also concur with your findings of non-suitability for Zook Creek and Buffalo Creek wilderness study areas. EXXON urges the continuation of the Miles City District's present land use planning and land management direction. We believe a joint effort by the BLM and industry is necessary for economically and environmentally sound exploration and production activities.

Thank you for the opportunity to comment and your consideration of our views. Please feel free to contact Fernando Blackgoat on our staff at (303) 789-7488 if he can be of further assistance.

June 7, 1984
(Date)

Jay Guerin
(Signature)

CONFIRMATION COPY

12. Thank you for your letter.

AtlanticRichfieldCompany Government Relations
555 Seventeenth Street
Denver, Colorado 80202
Telephone 303 575 7577

Public Lands

13

June 4, 1984

Mr. Jay Guerin
Project Manager
Miles City District Office
Bureau of Land Management
P.O. Box 940
Miles City, Montana 59301

Re: Powder River Resource Area
Draft Resource Management Plan and
Environmental Impact Statement

Dear Mr. Guerin:

Atlantic Richfield Company appreciates the opportunity to comment on the Bureau of Land Management's Draft Resource Management Plan/Environmental Impact Statement for the Powder River Resource Area in Montana.

We support the Bureau's Preferred Alternative, which recommends a nonwilderness designation for both Zook Creek and Buffalo Creek Wilderness Study Areas.

The Buffalo Creek WSA has high favorability for the occurrence of oil and gas based on adjacent production and the geologic characteristics of the area. This WSA is situated 26 miles west of Bell Creek (110 MMBO), along the major Muddy Sand Fairway (paleo shoreline). The trend is evident by the producing fields (Wyo) to the south of Buffalo Creek (Ute, Sand Bar East & West Fence Creek). The four mentioned fields have an average southerly distance of nine miles from Buffalo Creek. The Minnelusa exhibits 95 feet of (above 10%) porous sand just six miles to the east of Buffalo Creek. Also, production at Recluse (10 miles south) has been established in the Minnelusa, beside Muddy. Conclusively, the Buffalo Creek WSA exhibits prime characteristics for an oil prospect.

Northern Powder River Basin (with the Buffalo Creek WSA situated in its central region) is characterized by the predominance of oil and gas production from the cretaceous Muddy sandstone and the Pennsylvannian

- Permian Minnelusa formation. This WSA has optimum reservoir potential from the Muddy and the Minnelusa zone. Buffalo Creek is located near and within the major sand systems of the Muddy and Minnelusa respectively.

We are pleased that the Buffalo Creek and Zook Creek areas will be open to hydrocarbon development. It is essential that those lands with energy potential are left open so that the nation's dependence on foreign sources of energy can be reduced.

Sincerely,

P. B. Briggs
PBB:LJW:drm

13. The oil and gas development projections are consistent with historical data and with Geological Survey and Bureau of Land Management mineral assessments.

MONTANA PUBLIC LANDS COUNCIL

P. O. BOX 1679 — HELENA, MONTANA 59624

Phone (406) 442-342D

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WM. E. GARRISON	GLEN
JAY NANCE	BIRNEY
GEORGE RATHS	ROUNDUP

June 5, 1984

14

Jay Guerin, Project Manager
Miles City District Office
Bureau of Land Management
Box 94D
Miles City, Montana

Dear Sir:

The Montana Public Lands Council thanks you for the opportunity to comment on the Powder River Resource Management Plan. This Council represents producers grazing livestock on public lands in Montana and is directed by the Montana Stockgrowers Association, the Montana Wool Growers Association and the Montana Association of State Grazing Districts. These comments therefore represent the public lands positions of the three entities with respect to the Powder River Resource Management Plan.

Dur comments follow:

As appropriately described in the draft, the Powder River area is a vital area for the many ranchers who operate in that region. Therefore we must endorse Alternative C, which we feel is more in tune with our future needs than any other alternative. Dur reasoning is based on the idea that ranchers who use this area will need as many AUMs as possible to help meet future food and fiber demands. Although in the short term the general number of AUMs would be lost while mining was occurring, long term range conditions would improve with reclamation and rangeland improvements. In Alternative C, livestock operators would have more forage offered to them on their existing allotments and most likely there would be an economic improvement of the well being of all ranchers who utilize the Powder River region for grazing.

While we generally feel the preferred alternative is adequate in most regards, we cannot endorse this alternative because it does not allow for a large enough increase in the development of future AUMs for domestic livestock. Dtherwise we agree with the provisions under both Alternative C and the preferred alternative which allows for future development of coal leases. These coal leases will benefit ranchers in the area and the entire neighboring community. We also agree with the provisions that will allow for future land disposals and exchanges in the area.

As described, Alternative C will not only offer more AUMs in the future but ranchers using these public lands could see their permit values increase by 53 percent. This

increase could have many positive impacts, by giving ranchers a greater loaning value and increasing the overall value of individual ranches in the Powder River Resource area.

Addressing the issue of wilderness we agree with the recommendation that Zook Creek and Buffalo Creek should not be designated as wilderness. It continues to be the position of the Public Lands Council that further wilderness designation in Montana are not justified or needed. Those alternatives that recommend Zook Creek and Buffalo Creek would take these areas out of the multiple-use category and set them aside as a special managed and single use area. This would not only stop potential development of these areas but would discriminate against the general public and ranchers who use ORV's to recreate in these areas. Therefore we support provisions which allow multiple-use management to continue in these two Wilderness Study Areas.

While reviewing the draft, it was noted on page 241 that costs are estimated for each of the various projects to take place under the outlined alternatives. When reviewing these cost comparisons under noxious weed and prairie dog control, it was felt these estimations are low. We draw this conclucion when looking at the current problems we are having with noxious weeds and prairie dogs in Montana. For example, it has been estimated that noxious weeds are costing Montana $2 million a year. If funding is not more than adequate to properly control noxious weeds on our public lands, such as those in the Powder River region, then several thousand acres of both private and public lands could be threatened. It is also felt that in the future prairie dog control estimates of $7 an acre may not be enough if the problem becomes any larger and private lands are in jeopardy of being invaded.

In conclusion, we are again pleased to submit these comments to the Bureau of Land Management and hope you will give our remarks fair consideration when deciding how to manage the Powder River Resource Area.

Sincerely,

Jim Courtney

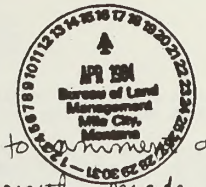
Jim Courtney, Chairman
Montana Public Lands Council

JC:ejr

CC: Representative R. Marlenee
Senator John Melcher
Senator Max Baucus
Executive Committee, Montana Stockgrowers Association
Board of Directors, Monana Public Lands Council
Executive Committee, Montana Wool Growers Association
Board of Directors, Montana Association of State Grazing Districts

14. Thank you for your letter.

15



11 April 1984

Dear Mr. Guerini:

I am writing to comment on the recommendation your group has recently made that the Zook Creek and the Buffalo Creek areas are not suitable for wilderness areas and I want to encourage you to give further consideration to that issue. These areas most certainly are deserving of consideration for wilderness status. I am familiar with the country in that area and I have read the Narrative Summaries of the Wilderness Intensive Inventory and I feel those summaries lend weight to the argument for wilderness consideration. There is not a whole lot of civilization impact on these areas, yet they are accessible and they offer unique and, if not protected, soon to be rare, qualities. These areas are prime examples of the kinds of things that make southeastern Montana such a rich and wondrous area, and these things are worthy of preservation. The opportunity for solitude, for hiking, for observing wildlife, for vista-viewing is valuable, and that opportunity should not be extended only to

2)

mountain areas with lakes and elk. Southeastern Montana deserves to have natural areas preserved and to make a statement like "there is nothing special" about these areas is too quick of a reaction to the situation, especially given the qualities and attributes described in the Narrative Summaries. These areas are special and should not be discounted and glossed over in this way. I am a political economist and one of the things I have done work with is proving that a variety of good things provided ends up with a far more valuable and fulfilling total. In this case, two areas in Eastern Montana plus two areas in Western Montana equal far more in total intrinsic value than the total of four areas in Western Montana and none in Eastern Montana.

I urge you to give these areas their due consideration for wilderness status. The Narratives indicate their worth, their value. Go to these areas with an open mind to the value of the solitude opportunities alone, and give these areas the credit for their "special" ness.

Sincerely, Marie A. Root

15. Consideration of Zook Creek and Buffalo Creek WSAs will continue through seperate legislative EIS's to be prepared for release by the Secretary of Interior. Subsequently, recommendations will be made by the President to Congress, so the wilderness recommendations made in this EIS will be reviewed and given further consideration by the Interior Secretary and President. Congress will consider the president's recommendation and statutorily release the areas or designate them as wilderness.

16

P. O. Box [illegible]2
Billings, M[illegible] 591[illegible]
April 24, 19[illegible]

Jay Guerin, Project Manager
Powder River RMP/DEIS
Miles City District Office, BLM
P. O. Box 940
Miles City, MT 59301

Re: Public Hearing, Colstrip, April 18th

Thank you for the opportunity to comment on the Powder River RMP/DEIS. My intention in endorsing the comments of previous speakers was to support the expressed position, to oversimplify, that BLM might setisfy many public concerns by paying even greater attention to detail and public involvement.

However, in my haste to be brief, I overlooked and omitted a critical exception to a previous comment that must be taken on behalf of the Sierra Club. The Sierre Club does not endorse statements opposing wilderness designation. In fact, the Sierra Club does support wilderness designation for BLM roadless areae, including those within the Miles City District. Further Sierra Club comment on specific roadless areas, particularly Zook Creek and Buffalo Creek, will be submitted prior to the June 7th RMP/DEIS comment deadline.

Thank you for your consideration. Pleese include this etatement in the FEIS.

Sincerely,

Ed Dobson

Edward M. Dobson
Sarpy Creek (East Fork)
ph: 342-5266

c: Daryle Murphy, Conservation Chairman
Montana Chapter, The Sierra Club
943½ N. 30th
Billings, MT 59101

P.S. Please enter my personal statement in the comment section as follows: I support wilderness designation for Buffalo and Zook Creeks. I oppose your preferred coal alternative because of a glaring inconeistency in your cumulative impact summary. While stating that no loss of AUMs will be suffered after reclamation, you admit that there will be significant impacts to groundwater in localized areas. Such impacts include permanent loss of near-surface groundwater in some areas with more xeric conditions reducing grazing forage. Further, your admission of the difficulty of recleiming at least Class VII and Class VIII lands seems not to be reflected in the original "no AUMs lost" statement. As well, your apparent assumption that reclaimed minespoil groundwater will recharge springs and intermittent streams rather than eubcrop in lower drainages ie subject to scientific scepticism. Generally speaking, your coal impacts cumulative summary seems not to justify your charge to manage the resource, especially where groundwater and alluvial valleys are et stake. Therefore, I support Alternative D for coal, Alternative B for vegetation, and Alternative A for lands. My position is flexible and I encourage your reeponse.

16. Thank you for your letter.

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MR. ARCHER: I am Walter Archer. I farm and ranch near Olive, Montana. I'm vice-chairman of the Northern Plains Resource Council and am speaking here tonight on behalf of that organization and also for myself as a rancher.

My comments will be really brief because I would like to submit written comments at a later time. I would just like to make a couple of points tonight.

First off, I really appreciate the range improvement list that was put into the Preferred Alternative and the comment in the summary that states:

"Ranch operations would not be adversely affected because no grazing reductions are proposed."

But I guess I find that inconsistent with statements made later on, and I'd like to read from the document for the benefit of the people here. The thing that I would like to read is from Table 2-24:

"Summary of Cummulative Impacts, Preferred Alternative:"

I guess the thing that bothers me is tonight you fellows have been telling us how coal has been put on the back burner; the range is what's important, yet number one on the preferred alternative states:

"If all 993,591 acres were mined, there should be 65.18 billion tons of the coal resource would be irreversibly and irretrievably lost. There would be insignificant impacts to other minerals. There would be a loss of 198,700 livestock AUMs during mining and reclamation activites with no loss of AUMs after reclamation.

"After mining and reclamation, sediment and water yields would be reduced by 626 and 29,974 acre feet per year respectively. There would be a general increase of 500 to 2,000 milligrams per TDS can be expected on the intermittent streams.

"There would be significant impacts to groundwater in localized areas. Successful reclamation potential is questionable on 120,000 acres of Class VII and VIII lands.

There would be a loss of 43,457 acre feet of soil.

"Coal development of all 993,591 acres would result in significant local impacts to wildlife. Impacts to cultural resources would be minimal."

Also, wilderness characteristics would be indirectly impacted by offsite mining nearby.

"There would be no impacts to lands. There would be a loss of 993,591 acres of recreational potential during mining and reclamation activities, but there would be insignificant impacts to hunting after reclamation.

"The air quality impacts would be minimal. There would be a loss of 49,140 acres of forest land. There would be 47,301 acres of agricultural land lost during mining with no impact after reclamation.

"Additional coal production

would necessitate an increase of social services. Because of an increase in employment, population of Big Horn, Powder River and Rosebud Counties would increase by more than 20,500 by 1990.

"Coal development would dominate the region, and agricultural customs and cultures could be replaced by more urban forms.

"More employment opportunities would be provided for people in the area, thus causing a population gain."

I guess the part that bothers me about this--you know, I have no question that this is what would happen if this coal was developed, but right how I see no need for the coal, no chance of it being developed in the next few years.

What I don't understand is why this is put into the Preferred Alternative, why is this what you are wanting to do, if I'm understanding this right.

To me the emphasis on the range and improving the range should be the preferred alternative,

and that's where the emphasis should be placed.

I think that's all I'd like to comment at this time. I will submit written comments later. Thank you.

MR. PIERSON: Thank you, Walter.

That's the only card I have of people wishing to testify. Is there anybody else at this time who would like to make a statement?

(No response.)

MR. PIERSON: This hearing's closed, then.

(Whereupon, the hearing was concluded at 8:09 p.m.)

17. See Zook Creek WSA portions of Chapters 2,3 and 4 for an analysis of the impacts on wilderness characteristics of offsite coal mining.

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the back of the room. Please do so now.

If you wish to testify and have not filled a card out, please do so.

Number two, when you are called upon to testify, please begin by stating your name and who you represent. If you are reading from a written text that is lengthy, please summarize the more important points and submit the written text to the court reporter.

Any other written comments should also be submitted to the court reporter. The reporter will ensure that all written comments are entered into the record.

I ask that only one representative from any organization present the views for that organization.

Anyone wanting a copy of the hearing transcript may make arrangements with the court reporter at the close of this hearing. Copies of the transcript will be available for public review at the Bureau of Land Management's Montana State Office in Billings and at the Miles City District Office in Miles City.

Are there any procedural questions at this time?

I will now call the first witness, Mr. Mark Dodd, Colstrip, Montana.

MR. DODD: My name is Mark W. Dodd. I reside in Colstrip, Montana. I am giving this statement as a concerned citizen and outdoor enthusiast who could be

directly affected as a result of the implementation or nonimplementation of the preferred alternative in this Powder River Resource Area plan.

My concerns are 4-fold, addressing what I perceive to be inadequacies or omissions in regard to execution of the plan.

A definite set of requirements needs to be set forth in regard to sales or exchanges of federally owned lands as to who will be notified of such anticipated events: timing of such notices, existing appraisals and the like.

I feel that reliance strictly upon the media to inform the general public is inadequate. I would rather have mailings from the BLM itself.

Number two, a definite set of requirements for coal lease bidding and coal mining developments also needs to be established and incorporated as a part of this plan.

Again, I would advocate mailings from the BLM for interested parties, including the general public, advising the anticipated events throughout the process of leasing coal.

Hopefully, such information would include environmental impact statements for specific areas being contemplated for coal leases as they occur.

Number three, should changes be made to the preferred alternative as presented in this draft environmental impact statement dated March, 1984, in regard to certain

wilderness study areas, Zook Creek and Buffalo Creek, I wish to be on record opposing further consideration of these areas as wilderness areas.

Should reconsideration as wilderness study areas become an eventuality, I would request additional hearings on the specific area.

Number four, finally I would request inclusion in the final Resource Management Plan specific directives regarding execution of agreements between various agencies having jurisdiction involving once again public information.

Such agencies include but are not necessarily limited to the Bureau of Land Management, the Bureau of Reclamation, the Montana Department of Highways, the Montana Department of Fish, Wildlife and Parks, and the U.S. Geological Survey.

In particular regard to the Bureau of Land Management, Fish, Wildlife and Parks-landowner agreements concerning recreational access and cooperative access management programs, I request mailings as well as media announcements concerning specific information as to what lands are open for what purposes, when and who to contact relative to landowner permission or notification.

I also request to be allowed my input when such programs are in their formative stages.

Thank you for allowing me to participate in

these proceedings, respectfully submitted, Mark Dodd, also signed by Jerry George, a resident of Colstrip as well, and, basically, a concerned citizen and outdoor enthusiast.

MR. PIERSON: Thank you, Mark.

The next witness is Robert N. Suttle.

MR. SUTTLE: My name is Robert N. Suttle. I'm a resident of Colstrip. And I feel that there shouldn't be any more development of the Resource Plan or development in the Powder River area.

One of my basic concerns is that I feel that possibly the BLM does not really have an understanding as to land boundaries and what is under control by whom in that area.

I think before any more input -- or I should say publications or discussions are offered by the BLM, they should make forth an effort to establish where the boundaries in that area are and what is BLM property.

That's all I have.

MR. PIERSON: I have no other witnesses who signed up to testify. Is there anybody who would like to testify at this time?

Okay, would you please come forward and state your name?

MR. DOBSON: I'm Ed Dobson, it's D-O-B-S-O-N, from Sarpy Creek. And, basically, I would like to support

18. Congress will probably hold hearings on any legislation relevant to wilderness. The Bureau considers these hearings on the Powder River Resource Management Plan to meet the requirements of Section 3(d) of the Wilderness Act.

APPENDIX A
FEDERAL COAL LANDS REVIEW PROCESS

Note: This appendix is largely derived from Appendix D of the PR-RMP/FEIS.

CALL FOR COAL RESOURCE INFORMATION

Calls for expression of interest were sent to 34 companies on July 13, 1981.

There were seven replies.

IDENTIFICATION OF COAL WITH DEVELOPMENT POTENTIAL

The resource Evaluation Branch of the Minerals Management Service, Billings, Montana (now the BLM Branch of Solid Minerals, Montana State Office, BLM) evaluated the Powder River Resource Area to determine areas with coal development potential.

Criteria for the determination are:

Maximum 15:1 stripping ratio
Maximum 500 feet overburden
Coal at least five feet thick

If an area met all three criteria it was classified as having development potential. These parameters were used for coal with over 7,000 BTU per pound. Most of the coal in the resource area is in this category. But coal in the Pine Hills area east of Miles City has lower heating values. For this RMP, however, all coal was delineated based on the above parameters. A small acreage of coal exists below 7,000 BTU per pound. These criteria result in a greater tonnage of coal over a given area than the currently recognized maximum economic stripping limits used by surface miners in the region (generally limited to 6.5:1 maximum stripping ratio, 200 feet maximum overburden, and for purposes of the RMP/EIS screening analysis, coal beds greater than 20 feet thick).

For purposes of the RMP/EIS screening analysis the legal subdivision (required for possible leasing) was used to describe the acreage rather than the free-flowing, and somewhat smaller, actual boundary of the coal resources. Tonnage figures used in the RMP/EIS were based on the actual acreage X thickness of coal X 1770 tons per acre foot and denote the actual tonnage of coal with development potential within the legal subdivision.

APPLICATION OF UNSUITABILITY CRITERIA

The unsuitability criteria in 43 CFR 3461 provide that coal lands shall be considered unsuitable for all or certain stipulated methods of coal mining if they fall within any of 20 categories listed in Appendix D of the PR-RMP/EIS.

In conformance with this requirement, all 1,125,600 acres of federal coal with development potential in new planning were assessed to see what unsuitability criteria applied. As a result, 61,615 acres containing 4.8 billion tons of coal were found unsuitable without exception for coal leasing. An additional 39,713 acres were identified as containing unsuitability criteria where an exception has been made or may be applied in the future, and carried forward for further lease or exchange consideration with stipulations. Also identified were 856 stream miles of preliminarily identified alluvial valley floors on both federal and p]rivate minerals. Because wildlife inventories were incomplete over much of the coal region, 522,500 acres in Alternative B and 589,200 acres in Alternative C were identified as acceptable for further lease or exchange consideration pending further wildlife studies.

Methods

From January to March 1983, the Resource Area staff identified locations where unsuitability criteria applied within the areas of coal with development potential. Overlays showing application of the individual criteria were compiled at 1:100,000 scale for the six quadrangles covering the coal area (Birney, Broadus, Lame Deer, Powderville, Miles City and Forsyth). Composite overlays were constructed showing application of the unsuitability criteria, areas deleted due to unsuitability criteria, and areas needing further study. These overlays are available for inspection at the Miles City District Office. Unsuitability determinations were made by legal subdivision. The minimum acreage deleted was a quarter of a quarter section (40 acres) or an individual lot. Only in the case of floodplains was acreage deleted on other than a legal subdivision. Unsuitable acreages and tonnages are described by legal subdivision and discussed by criterion and county in the coal Management Situation Analysis on file at the Miles City District Office.

Results

The following is a summary of results obtained for each criterion relevant to WSA's i.e. Criteria 4, 5, and 15.

RECREATIONAL AND NATURAL VALUES

Criterion 4 — Wilderness Study Areas

Two Wilderness Study Areas (WSAs) were found unsuitable without exception. a total of 8,438 acres covering the entire Zook Creek WSA were deleted from further lease consideration. This acreage is slightly larger than the actual acreage of the WSA, because deletions were made on legal subdivisions. A total of 5,933 acres were deleted for Buffalo Creek WSA. This acreage differs slightly from actual WSA acreage because of legal subdivisions and also because a small part of the WSA lies outside the high and moderate coal area. If the WSAs were dropped from wilderness consideration, the areas could be screened further for leasing consideration.

Criterion 5 — Scenic Areas

Because WSAs are designated Class 1 scenic areas in Visual Resource Management, the 8,438 acres in Zook Creek and 5,933 acres in Buffalo Creek have also been deleted as unsuitable without exception under Criterion 5 as well as Criterion 4.

Criterion 15 — State Resident Fish and Wildlife

A variety of habitats associated with seven wildlife species were identified as unsuitable. On some of the Criterion 15 acreage "a lease may be issued if, after consultation with the State, the surface management agency determines that all or certain stipulated methods of coal minimg will not have a significant long-term impact on the species being protected" (43 CFR 3461.(0)(1)). These mitigable acreages consist mainly of sharp-tailed grouse wintering areas. Habitat recovery and replacement plan requirements are detailed in the coal MSA. Most of the critical mule deer, whitetailed deer, antelope, and bighorn sheep winter range as well as critical turkey wintering areas were identified as unsuitable without exceptions. Approximately one-half of Zook Creek WSA was identified as unsuitable under this criteria. All of Buffalo Creek was identified as suitable subject to, at a minimum, four season wildlife inventories.

SURFACE OWNER CONSULTATION PROCESS

According to Public Law 95-87, the 1977 Surface Mining Control and Reclamation Act (SMCRA), all comprehensive land use plans involving potential coal leasing shall consult with qualified private surface owners over federal coal with development p]otential, and ask the surface owner to state his/her preference for or against the offering of the deposit under his/her land for lease. Since there is no private surface land within either WSA, this screen is not discussed further.

MULTIPLE USE CONFLICT ANALYSIS

Coal planning regulation 43 CFR 3420.1-4e(3) states that "multiple land use decisions shall be made which may eliminate additional coal deposits from further consideration for leasing, to protect resource values of a locally important or unique nature not included in the unsuitability criteria."

Coal areas leased and cleared in previous planning were already analyzed for multiple use conflicts in the existing MFPs (Decker-Birney, South Rosebud and Coalwood). These MFPs were determined to meet principles of multiple use/sustained yield as required by Section 103(c) and (h) of FLPMA. For this RMP/EIS, multiple use conflicts were considered only on the 964,700 acres of Federal coal in new planning which had passed through the unsuitability and surface owner screens. BLM requested information regarding religious sites from the Northern Cheyenne Tribe in compliance with the Ameridan Indian Religious Freedom Act. No information was received.

Factors in Analysis

Twelve resource categories and factors were defined which could be significantly attected by mining. These were:

(1) Negative surface owner views which were not deleted by the surface owner consultation screen;

(2) Soils in USDA Soil Conservation Service land capability classes VII and VIII are soils and landforms with questionable reclaimability due to the chemical and physical properties of the soils (including factors such as steep slopes, sodium content and depth to bedrock);

(3) Cropland in preliminarily identified AVFs and in areas of negative surface owner views defined in Category 1. Lands currently being used as cropland are delineated in the Conservation Districts' Long Range Program for Resource Conservation, published by the USDA Soil Conservation Service;

(4) Wildlife values, including whitetail, mule deer, and antelope winter range and all-season use, and turkey, raptor, and grouse habitat. Known potentially unsuitable wildlife values in areas where inventory was incomplete were also delineated as multiple use conflicts;

(5) Power plants and associated facilities;

(6) Areas of significant hunting or other recreational use, and Class II or higher Visual Resource Management areas;

(7) Buffer zones aaround townsites;

(8) Forested areas, as defined on public surface by a BLM survey of commercial and noncommercial forest land conducted in the mid 1960s, and on private surface by shading on 1:100,000 scale USGS topographic maps;

(9) Oil and gas fields defined by the Montana Oil and Gas Commission and Known Geologic Structures defined by BLM;

(10) Cultural resource sites eligible for the National Register of Historic Places but suitable for leasing with stipulations under the unsuitability criteria;

(11) Existing Allotment Management Plans; and

(12) Areas preliminarily identified as AVFs by BLM staff. Color infrared aerial photography was analyzed as well as reconnaissance maps of alluvial valley floors in the Montana portion of the Powder River Basin, prepared by Earth Resource Associates in 1983 for the Office of Surface Mining. Consideration of AVFs for multiple use conflict purposes is in addition to the requirement under unsuitability Criterion 19 that alluvial valley floors be deleted at mine plan stage. Some of these areas also contain riparian wildlife habitat.

Methods

Transparent overlays for each of the twelve multiple use categories were stacked onto 1:100,000 scale base maps for each of the six quadrangles with coal potential in the Resource Area (Birney, Broadus, Lame Deer, Powderville, Miles City and Forsyth). While one multiple use conflict by itself was generally considered not enough to drop an area from further coal leasing consideration, having several overlapping multiple use conflicts over a single area was considered significant. In general, areas with four or more overlapping multiple uses were deleted from further lease consideration. However, the actual number of overlaps needed varied.

Power plants and townsite buffer zones were deleted whether or not there were additional overlaps. Areas containing very thick coal close to the surface and near current or proposed mining may have needed more than four multiple use conflicts to be deleted, because the high coal potential of the area was weighted as an additional multiple use consideration. Some areas having fewer than four conflicts were deleted where they were wedged between large blocks of land with four or more overlapping conflicts.

Because of the large number of overlapping multiple uses in the Broadus and Birney quadrangles, two groups of BLM staff independently deleted areas from further leasing considerations. These two sets of maps were then compared and the final areas deleted, reflecting a compromise between the two groups. Areas were deleted based on legal subdivisions. Transparent overlays at 1:100,000 scale showing application of multiple use conflicts and areas deleted due to multiple use conflicts are available at the Miles City District Office for inspection.

Multiple use analysis was based on resource information available as of mid-1983.

Results

All of Buffalo Creek WSA was deleted due to this screen.

REFERENCES

Code of Federal Regulations 1981. Title 43.

Coenenberg, Joe. Oral communication. Vegetation Specialist, Western Energy Company.

Cole, G.A. Matson, R.E. and Pederson, R.J. 1980. Montana coal: A guide to coal geology, resources, and production: Montana Bureau of Mines and Geology Special Publication 83

Davis, Gary A. 1977. Management Alternatives for Riparian Areas in the Southwest. A Symposium on the Importance, Preservation and Management of Riparian Habiatat, Tucson, Arizona July 9, 1977.

Davis, H.H. 1981. Hydrologic Regional Paper, Powder River Coal Region in Montana. Unpublished Manuscript, BLM (USDI), Miles City, Montana.

Dood, Arnold R. 1982. Big Game Survey and Inventory (Antelope) Region Seven. Progress Report W-130-R-13,Job 1-7,24pp. Montana Department of Fish, Wildlife and Parks, Helena, Montana.

Driscolo, P. 1982. Personal communication. Montana Department of State Lands, Air Quality Specialist, Helena, Montana.

Eager, Sy 1982. Personal communication. Bureau of Indian Affairs, Northern Cheyenne Agency, Lame Deer, Montana.

Ferreria, R.F. 1981. Mean Annual Streamflow of Small Drainage Basins in the Coal Area of southeastern Montana U.S. Geological Survey, Water Resources Investigations 81-61.

Flores, R.M. 1981. Coal deposition in fluvial paleonvironments of the Paleocene Tongue River member of the Fort Union formation, Powder River Area, Powder River Basin, Wyoming and Montana, in recent and ancient nonmarine depositional environments; models for exploration; Society of Economic Paleontologists and Mineralogists Special Publication No. 3.

Gates, Paul W. and Swenson, Robert W. 1968. History of Public Land Law Development.

Gifford, G.F. 1975, Beneficial and Detrimental Effects of Range Improvement Practices on Runoff and Erosion, In Watershed Management, a Symposium, American Society of Civil Engineers, Logan, Utah: pp. 216-48.

Hodson, W.G., Pearl, R.H. and Druse, S.H. 1973. Water Resources of the Powder River Basin and Adjacent Areas, Northeastern Wyoming, U.S. Geological Survey Hydrologic Investigations Atlas HA-465.

Hunter, H.E., Ross, R.L. 1976. Climax Vegetation of Montana. U.S.Department of Agriculture, Soil Conservation Service.

Jonas, R. 1966. Merriam's Turkey in Southeastern Montana. Montana Department of Fish and Game. Technical Bulletin No. 3. 36 pp.

Kelts, H. 1982. Personal Communication. Air Quality Bureau. Montana Department of Health and Environmental Sciences, Helena, Montana.

Knapton, J.R. and McKinley, P.W. 1977. Water Quality of Selected Streams in the Coal Area of southeastern Montana. U.S. Geological Survey, Water Resources Investigations 77-80, Helena, Montana.

Lukow, T. 1982. Personal Communication. Air Quality Specialist, Bureau of Land Management, Cheyenne, Wyoming.

Martin, Peter 1980. Terrestrial Wildlife Habitat Inventory in Southeastern Montana. Final Report. Montana Department of Fish, Wildlife and Parks and USDI/BLM. 114pp.

Matson, R.E. and Blumer, J.W. 1973. Quality and Reserves of Strippable Coal, Selected Deposits, Southeastern Montana; Montana Bureau of Mines and Geology. Bulletin 91.

Montana Air Quality Bureau 1976-1980. Annual Air Quality Data Summary for Montana. Department of Health & Environmental Sciences (NDHES). Helena, Montana.

Montana Department of Fish, Wildlife and Parks 1979-81. Statewide Wildlife Survey and Inventory. Big Game Surveys and Inventory for Deer and Antelope.

Montana Department of State Lands. Draft 1982. EIS for Montco Mine, Rosebud County, Montana.

Montana Department of Fish, Wildlife, and Parks. Steve Knapp. 1983.

Montana, Oil and Gas Conservation Division. 1982. Annual review for the year 1981 relating to oil and gas, Volume 25; Montana Board of Oil and Gas Conservation.

Mountain West Research-North 1983. Decker Area Mines Comprehensive Social Sciences Study. Prepared for Montana Department of State Lands and U.S. Office of Surface Mining.

Omang, R.J., Parret, C. and Hull, J.A. 1983. Mean Annual Runoff and Peak Flow Estimates Based on Channel Geometry of Streams in Southeastern Montana. U.S. Geological Survey Water Resources Investigations 82-4092.

Payne, G.F. 1973. Vegetative Rangeland Types in Montana; Bozeman, Montana Agricultural Experiment Station, Bulletin 671, 16p.

Raisch, R.W. 1982. A Background Air Quality Study for Four Remote Montana Locations. Performed by Montana Department of Health and Environmental Sciences and Intermountain Ambient for BLM.

Skaar, P.D. 1980. Montana Bird Distribution-Mapping by Latilong. 2nd Ed. P.D. Skaar, 501 S. Third, Bozeman, Montana. 66pp.

Sonderegger, J.L., and Bergantino, R.N. 1981, Geothermal resources map of Montana: Mont. Bureau Mines and Geology Hydrogeologic Map 4.

Tetra Tech, Inc. March 1983, Geology, Energy, and Mineral (GEM) Resource Assessments of the Tongue River GEM Resource Area, Montana, including the Zook Creek Wilderness Study Area (MT-027-701); Tongue River Breaks Contiguity (MT-027-736); and Moorhead Wilderness Study Area (MT-027-702); Draft Report, BLM Contract No. YA-553-CT2-1055.

Thompson, Larry S. 1982. Distribution of Montana Amphibians, Reptiles and Mammals. Montana Audubon Council, Billings, Montana 25 pp.

U.S. Bureau of Land Management 1979. Soil Vegetation Inventory Methods.

U.S. Bureau of Land Management 1982. Powder River Resource Area Management Framework Plan Amendment. Miles City District, U.S. Dept. of Interior.

U. S. Bureau of Land Management 1981. Powder River Environmental Impact Statement, Coal. Wyoming State Office.

U.S. Department of Agriculture, Soil Conservation Service 1972. Technicians Guide section II-E-3 Range Site Criteria.

U.S. Department of Agriculture, Soil Conservation Service 1976. Climax Vegetation of Montana.

U.S. Department of Agriculture, Soil Conservation Service 1976. National Range Handbook.

U.S. Department of Commerce, Bureau of the Census, 1980. Advance Estimates of Social, Economic and Housing Characteristics for Montana.

U.S. Department of Interior, Bureau of Land Management. 1984. Powder River Resource Area. Resource Management Plan.

U.S. Department of Interior, Geological Survey and Montana Department of State Lands 1979. Northern Powder River Basin Coal, Montana.

Youmans, Heidi B., and Swenson, Jon E., 1982. Winter Distribution of Habitat Use by Mule Deer and White-tailed Deer in Southeastern Montana. Appendix to Big Game Survey and Inventory (Deer) Region Seven, Progress Report W-130-R-13, Job 1-7, 17pp. Montana Department of Fish, Wildlife and Parks, Helena, Montana.

GLOSSARY

ANIMAL UNIT MONTH (AUM) — A standardized measurement of the amount of forage necessary for the complete sustenance of animal for 1 month; also, the measurement of the privilege of grazing one animal for 1 month.

BRITISH THERMAL UNIT (BTU) — The amount of heat required to raise the temperature of one pound of water one degree fahrenheit.

CRITICAL WILDLIFE HABITAT — The area of land, water and airspace required for the normal needs and survival of wildlife species of special concern.

CULTURAL RESOURCES — A term that includes items of historical, archaeological or architectural significance which are fragile, limited and nonrenewable portions of the human environment.

FLPMA — The Federal Land Policy and Management Act of 1976 (Public Law 94-579.90 Stat 2843 43 USC 17011.

HUNTER ACCESS PROGRAM (S-60) — A BLM program that allows a private landowner to permit hunting on private land in lieu of hunting on public land.

IMPACT — The effect, influence, alteration, or imprint of an activity.

MECHANICAL TREATMENT — Treatment by mechanical means of an area of range including contour furrowing, pitting, plowing and seeding, chiseling, scalping, etc.

MOTORIZED EQUIPMENT — Any machine activated by nonliving power source except small battery-powered, hand-carried devices such as flashlights, shavers, Geiger counters, and cameras.

MOTOR VEHICLE — Any vehicle which is self-propelled or any vehicle which is propelled by electric power obtained from batteries.

NATURALNESS — Refers to an area which "generally appears to have been affected primarily by the forces of nature, with the imprint of man's work substantially unnoticeable." (From Section 2(c), Wilderness Act)

OFF-ROAD VEHICLE (ORV) — Any motorized vehicle designed for or capable of cross-country travel on or immediately over land, water, sand, snow, ice, marsh, swampland, or other terrain.

OUTSTANDING — Standing out around others of its kind, conspicuous, prominent or superior to others of its kind, distinguished, excellent.

POST-FLPMA — The period of time after the enactment of the Federal Land Policy and Management Act (October 21, 1976).

PRE-FLPMA — On or before October 21, 1976.

PRELIMINARY WILDERNESS RECOMMENDATION — Refers to a wilderness recommendation at any stage prior to the time when the Secretary of the Interior reports his recommendation to the President. Until the Secretary acts, the recommendation is "preliminary" because it is subject to change during administrative review.

PUBLIC LANDS — Any land and interest in land owned by the United States and administered by the Secretary of the Interior through the Bureau of Land Management, without regard to how the United States acquired ownership.

RANGE IMPROVEMENT — Any activity on or relating to rangelands designed to improve production of forage or change vegetation composition, control pattern of use, provide water, stabilize soil and water conditions, or enhance habitat for livestock, fish, wildlife and wild horses and burros.

ROAD — A vehicle route which has been improved and maintained by mechanical means to ensure relatively regular and continuous use.

ROADLESS — For the purpose of the wilderness review program, this refers to the absence of roads which have been improved and maintained by mechanical means to ensure relatively regular and continuous use. A way maintained solely by the passage of vehicles does not constitute a road.

SOLITUDE — The state of being alone or remote from habitations or in isolation.

VEGETATION MANAGEMENT — Control or change of the vegetation resource which results from purposeful actions of other activities i.e., livestock, wildlife management.

VISUAL RESOURCE MANAGEMENT — Consideration of actions that may affect existing landscapes. Considered are the kinds of artificial structures and modifications which are acceptable to meet established visual goals.

WILDERNESS AREA — An area formally designated by Act of Congress as part of the National Wilderness Preservation System.

WILDERNESS CHARACTERISTICS — Key characteristics of a wilderness listed in Section 2(c) of the Wilderness Act of 1964 and used by BLM in its wilderness inventory. These characteristics include size, naturalness, outstanding opportunities for solitude, outstanding opportunities for primitive or unconfined recreation, and supplemental values.

WILDERNESS MANAGEMENT — The management of lands which have been designated by Act of Congress as wilderness areas.

WILDERNESS RECOMMENDATIONS — A recommendation by the Bureau of Land Management, the Secretary of the Interior, or the President, with respect to an area's suitability or nonsuitability for preservation as wilderness.

WILDERNESS REPORTING — The progress of preparing the reports containing wilderness recommendations on wilderness study areas and transmitting those reports to the Secretary of the Interior, the President and Congress.

WILDERNESS REVIEW — The term used to cover the entire wilderness inventory, study and reporting phases of the wilderness program of the Bureau of Land Management.

WILDERNESS STUDY AREA — A roadless area or island that has been inventoried and found to have wilderness characteristics as described in section 2(c) of the Wilderness Act of 1964 (78 stat. 891).

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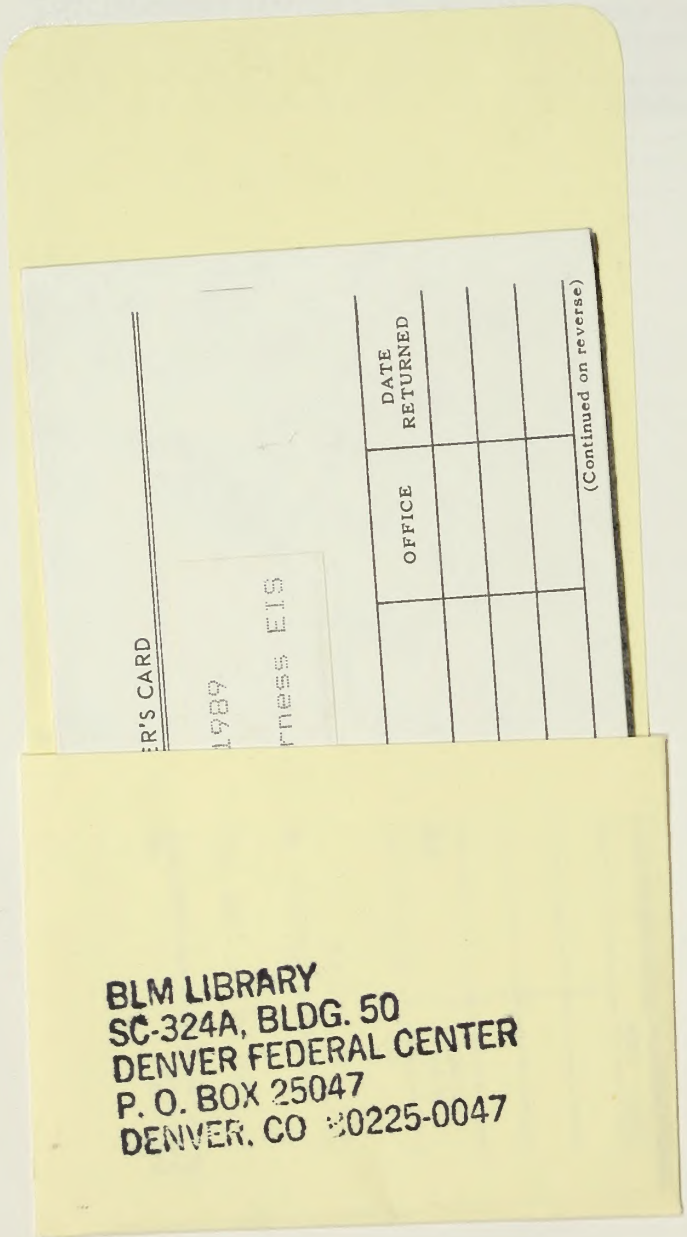
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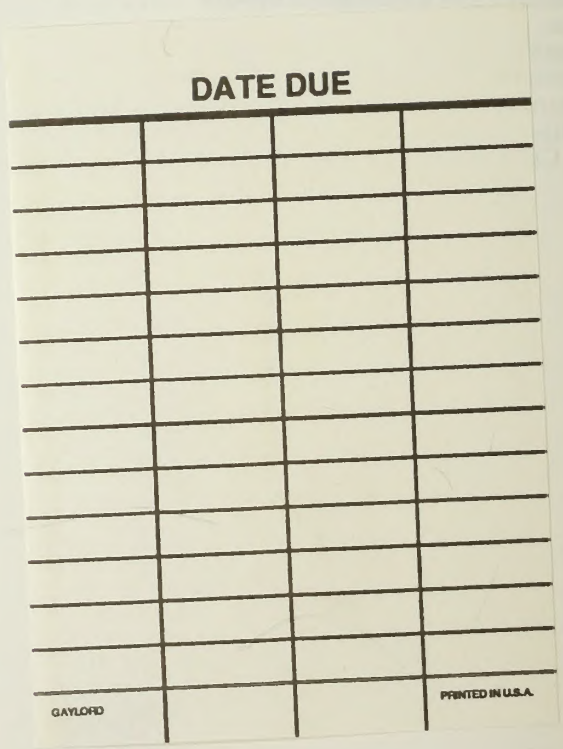
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